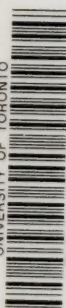


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# T. LUCRETI CARI

DE RERUM NATURA

LIBER PRIMUS

EDITED

*WITH INTRODUCTION, NOTES AND INDEX*

BY

J. D. DUFF

CAMBRIDGE:

AT THE UNIVERSITY PRESS

1962

PUBLISHED BY  
THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, N.W. 1  
American Branch: 32 East 57th Street, New York 22, N.Y.  
West African Office: P.O. Box 33, Ibadan, Nigeria

W COLLEGE

*First Edition* 1923

*Reprinted* 1936

1950

1958

1962

AUG 27 1951

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901792 .

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461  
1923  
554

*First printed in Great Britain at the University Press, Cambridge*  
*Reprinted by Billing & Sons Ltd, Guildford*

## PREFACE

A NEW EDITION of the First Book of Lucretius cannot, I hope, be thought superfluous. Forty-nine years have passed since the date of Munro's third edition; and though the text of the poem remains substantially as he left it, a good deal has been done since then for the interpretation, and the best part of this is not easily accessible to the English reader.

The First Book is one of the finest in the poem, and it is also one of the hardest and needs much explanation. In order to keep my book within moderate compass, I have restricted illustration, even from the other books of Lucretius, within narrow limits; and I have seldom noticed readings or explanations which I believed to be wrong. But I have tried to leave no difficulty undiscussed.

In the Introduction I have spoken of Lucretius and his poem, of his chief manuscripts, and of some of his editors. In the last section I have only alluded to Lachmann and Munro, and have said more of Bernays and Giussani. In the Text some typographical devices have been used, in order to make the course of the argument clearer. In the Notes there are few lines, I fear, that have escaped comment; but I have tried to write no more than was necessary on each.

I gratefully acknowledge the assistance of others. Mr W. T. Vesey, Fellow of Gonville and Caius College, read all the Notes in manuscript and discussed with me the points on which we differed. Not seldom I was

persuaded to change my opinion: where I could not follow him, I feel that I am quite likely to be wrong. The Notes were read again in proof by P. W. Duff, Scholar of Trinity College, Cambridge, who detected some misprints and inaccuracies and also corrected some mistakes due to my ignorance of mathematics and physics.

J. D. DUFF.

TRINITY COLLEGE, CAMBRIDGE.

*October 21, 1922.*

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# INTRODUCTION

## I

### T. LUCRETIUS CARUS

The poem of Lucretius is a notable instance of what Milton in his *Areopagitica* calls 'the precious life-blood of a master spirit, embalmed and treasured up on purpose to a life beyond life'; but of the poet's own life and its outward circumstances hardly anything at all is known. We are not told where he was born, or where he lived, or in what society he moved; we can only guess at the way in which his life was spent. The tradition confines itself almost exclusively to his death.

The Chronicle of Jerome, compiled about 400 A.D., has a record, probably derived from a lost work by Suetonius, to the following effect:

The poet Titus Lucretius was born in 94 B.C.; he lost his reason in consequence of drinking a love-philtre and died by his own hand in his forty-fourth year, after composing in his lucid intervals several books which Cicero afterwards corrected<sup>1</sup>.

Thus the date of his death would be 50 B.C. But Donatus, in his life of Virgil, mentions as a remarkable coincidence that Lucretius died (nothing is said of madness or suicide) on the very day on which Virgil entered on his sixteenth year<sup>2</sup>, *i.e.* on October 15, 55 B.C. It is generally believed that Donatus has preserved the true

<sup>1</sup> *Titus Lucretius poeta nascitur. Postea amatorio poculo in furorem uersus, cum aliquot libros per intervalla insaniae conscribisset, quos postea Cicero emendavit, propria se manu interfecit anno aetatis XLIV.*

<sup>2</sup> [*Vergilius*] *uirilem togam xv anno natali suo accepit, euenitque ut eo ipso die Lucretius poeta decederet.* Donatus also probably took this biography from Suetonius.

date, and that Lucretius was born in 99 B.C. and died in 55 B.C. The latter date is confirmed to some extent by the mention of Lucretius and his poem in a letter written by Cicero to his brother Quintus in January or February of the year 54 B.C. Of this letter more is said below.

Jerome's other statements have given rise to much doubt and endless discussion. There is certainly some reason for scepticism. A 'love-philtre' seems to have no place in sober biography. Further, with regard to the alleged madness and suicide, it is strange that such a tragical ending of a great poet is nowhere alluded to by any subsequent Latin writer; and on the other hand, the story sounds quite like a pious fiction invented by someone who was shocked by the heterodoxy of Lucretius. A similar end was invented for Lucian, another Epicurean heretic: he is said by the lexicographer Suidas<sup>1</sup> to have been torn to pieces by dogs, which may be a distorted version of the fact that he had warm contentions during his lifetime with certain Cynic philosophers. Again it is almost incredible that the poem was written in the lucid intervals of insanity: in those parts of the poem which are not obviously unfinished, the argument is orderly, almost to pedantry, and the arrangement masterly. And yet, for all this, Jerome's account of his death may be true:

'We poets in our youth begin in gladness;  
But thereof come in the end despondency and madness.'

The statement that Cicero corrected the books implies one fact which is certainly true—that Lucretius, like Virgil after him, left his poem unfinished, and that it was given to the world after his death by some other hand. But we are not told what kind or amount of 'correction' the editor supplied, nor even which Cicero was the editor,

<sup>1</sup> 'It was customary for Suidas to invent a horrid death for those whose doctrines he disliked' (T. Dyer in Smith's *Dictionary of Biography*, II p. 814).

the orator himself or his brother Quintus. Munro's conclusions are now generally accepted—that Marcus Cicero was the so-called editor, that he gave the poem to the world exactly as it was left by the author, and that he is likely to have employed the services of Atticus in the production; for Atticus owned a large copying-establishment and himself professed the philosophy of Epicurus.

It was said above that Cicero mentions the poet in a letter written to his brother at the beginning of the year 54 B.C., a few months after the poet's death. In all the works of Cicero there is no other mention of Lucretius by name. Cicero's taste in poetry is well known: a hearty admirer of Ennius and his school, he felt something between amusement and contempt for those writers of the day who were endeavouring, with Catullus and Calvus as their leaders, to reproduce the learned art of the Alexandrian scholars<sup>1</sup>. We should expect to find in Cicero unbounded admiration for a poem so fresh and strong and native as the *De Rerum Natura*. But what he says on the subject to his brother, if not unappreciative, is certainly disappointing in its coolness and brevity. He wrote thus:

*Lucreti poemata, ut scribis, ita sunt, multis luminibus ingenii, multae tamen artis*<sup>2</sup>.

Quintus had expressed his opinion, and Cicero now concurs in it. His words probably mean: 'I agree with your estimate of the poem of Lucretius. It displays not only the native genius (*ingenium*) of the early Roman poets, but also that art of finished execution (*ars*) which our modern poets have imitated from the Alexandrians<sup>3</sup>.' But all the editors of Cicero's *Letters* used to insert a *non*

<sup>1</sup> Compare *Tusc. Disp.* iii 45 with *Ad Att.* vii 2, 1.

<sup>2</sup> *Ad Quintum fr.* ii 9 (11), 4.

<sup>3</sup> For the contrast between *ingenium* and *ars*, compare Ovid *Trist.* ii 424 *Ennius ingenio maximus, arte rudis*; Quint. *Inst.* i 8, 8 *ueteres Latini...plus ingenio quam arte ualuerunt*.

before either *multis* or *multae*, thus denying to Lucretius either *ingenium* or *ars*. The insertion of a negative, however, is a bold step in any case where the text is intelligible without it. That Cicero should deny *ingenium* to Lucretius is inconceivable; if he had denied him *ars*, reasons could, I think, be given for such an opinion. But it is wiser to leave the text alone and believe that the brothers found both *ingenium* and *ars* in the poem. Still it is difficult to understand why Cicero was not more enthusiastic in its praise, and why there is not a single mention of Lucretius in the long series of philosophical works which Cicero poured forth ten years after the poet's death<sup>1</sup>.

So meagre and uncertain are the details which we learn from the writers of antiquity about the personal history of Lucretius<sup>2</sup>. He is mentioned occasionally by later poets and prose-writers, sometimes quoted and sometimes criticised; but no particulars of his life or death are anywhere else recorded. It is possible to add something to tradition from the internal evidence of his poem.

In the first place, it is fairly certain that Lucretius was a Roman of good family and fortune. His *gentile* name is that of an ancient patrician house; and the tone which he uses to Memmius, a man of high rank and a person of importance in his day, points to the same conclusion: he speaks as an earnest schoolmaster might speak to a pupil

<sup>1</sup> There are tolerably certain allusions to Lucretius in Cicero: see note to l. 74. The most explicit of these occurs in *Tusc. Disp.* i 48 *soleo saepe mirari nonnullorum insolentiam philosophorum, qui naturae cognitionem admirantur, eiusque inuentori et principi gratias exultantes agunt, eumque uenerantur ut deum; liberatos enim se per eum dicunt grauissimis dominis, terrore sempiterno et diurno ac nocturno metu*. Lucretius uses such language repeatedly of Epicurus.

<sup>2</sup> The manuscript life discovered by Dr John Masson in the British Museum in 1894 does contain some new details; but the source from which they were drawn is unknown, which makes one hesitate to attach importance to them.

whom he rather suspects of intending, some day, to play truant. A modern writer has called Lucretius 'the aristocrat with a mission'<sup>1</sup>; and it is true that his tone is that of a man living in easy circumstances and familiar with the luxury which he condemns as not productive of happiness.

It is even more certain that he took no part in public affairs. Political activity was never approved of by the rule of Epicurus; and Roman politics, during the manhood of Lucretius, could attract none but the bold and unscrupulous. The great Republic was reeling to its fall, and the horizon grew steadily darker and darker with the menace of civil war<sup>2</sup>. Lucretius never speaks with stronger conviction than when he denounces the career of the political adventurer<sup>3</sup>: it is quite possible that he wrote thus with Caesar in his mind. Nor again could the literary activity of the time bring him into close contact with other men: the literature he loved belonged to the past. He was before all things a student. Much of his time must have been spent over the Greek philosophers and poets. In one of his very rare self-revelations he tells us that the absorbing pursuit of his life, which he carried on in the watches of 'the clear nights,' and which haunted him even in his dreams<sup>4</sup>, was the study of the philosophers and the exposition in his poem of their 'glorious discoveries.' His master Epicurus himself left three hundred rolls, 'golden words,' says Lucretius, 'on all of which I feed like a bee among the flowers'<sup>5</sup>; and there are other philosophers whose authority he acknowledges or whose doctrine he refutes; Empedocles and Democritus are conspicuous among the former, Heraclitus and Anaxagoras among the latter. He also translates from or imitates the following Greek authors: Homer, Hesiod, Aeschylus, Euripides, Thucydides, Hippocrates, and perhaps Aristophanes and Plato. His Greek library must have been

<sup>1</sup> Myers, *Classical Essays*, p. 126.

<sup>2</sup> See note to l. 41.

<sup>4</sup> See i 142; iv 969.

<sup>3</sup> *E.g.* ii 11 foll.

<sup>5</sup> See iii 9-13.

large; and one is tempted to find a special affinity between his mind and that of Thucydides. The Latin writers whom he seems to have loved best survive only in fragments; yet it is possible to trace imitation of Ennius and his nephew Pacuvius, the chief epic poet and the chief tragedian of primitive Roman literature.

Finally, from the truth and evident pleasure with which he describes natural scenes and objects of all kinds, and uses them to illustrate his argument, we may surely infer that his life was spent by preference in the country and in the open air. One great charm of his poem is that it breathes more of the open air than of the library<sup>1</sup>. Let us think of Lucretius in some quiet place away from the bloody faction-fights of the Roman streets; let us imagine him watching the lambs frisking over the meadows in spring, or the summer sunrise, or the sea now dashing on the rocks and now rippling over the sand; let us fancy him returning at nightfall to pore over the rolls of Epicurus, and ponder the hard problem of reproducing their contents in the stubborn medium of Latin hexameter verse. How many a rough draft he must have thrown into the fire in the small hours! And then he went to bed, to pursue the familiar task in his dreams.

## II

### *DE RERUM NATURA*

The *De Rerum Natura* is a didactic poem: it professes to expound systematically a particular subject. The *Works and Days* of Hesiod, the *Georgics* of Virgil, Pope's *Essay on Man*, all belong to this class of poetry. The subject which the poem of Lucretius is intended to explain is the philosophical system of Epicurus or rather a part of it. The system was divided, like other ancient systems, into three parts: (1) Physics, or Natural Science; (2) Ethics;

<sup>1</sup> Sellar, *Roman Poets of the Republic*, p. 294.

(3) Logic or, as Epicurus preferred to call it, Canonic, the method of ascertaining truth. It is the first of these parts with which Lucretius is mainly concerned; his references to Ethics or Logic are merely incidental.

Poetry had been used already by Greek philosophers to convey their doctrine, for example, by Parmenides and Xenophanes; but the form and title of this poem are derived especially from Empedocles of Agrigentum, who lived in the fifth century B.C. and wrote a treatise *Περὶ Φύσεως* in hexameter verse, of which considerable fragments are extant. The poem of Lucretius is dedicated to Gaius Memmius, an aristocrat and politician<sup>1</sup>; why Lucretius chose him out for this distinction we do not know. No other contemporary is mentioned throughout the poem.

The first two books are devoted to an account of atoms and void, which are, according to Epicurus, the eternal and exclusive elements of which the universe is composed; here, too, the rival theories of other philosophers, Heraclitus, Empedocles, and Anaxagoras, are stated and refuted. The third book is taken up in proving that the soul is not immortal but a material part of man, made up of atoms as the body is, and perishing with the body. The fourth book explains the Epicurean theory of sight and the other senses; the fifth discusses the motions of the heavenly bodies, and describes the origin of the world, of life, and of human society. The last book is miscellaneous in its contents: it begins by discussing the nature of thunder, lightning, and other celestial phenomena; it deals next with various natural curiosities, such as magnetic attraction, and ends with a description, taken from Thucydides, of the plague which devastated Athens in 430 B.C. There is no sort of epilogue to the poem as a whole; it is very likely, that if Lucretius had lived to complete his task, the ending would have been less abrupt than it is now.

<sup>1</sup> See note to l. 26.

Thus it will be seen that Lucretius begins by laying down the first principles of the atomic philosophy, and then discusses in his last four books some special applications of that doctrine. The poet's aim throughout is practical and moral rather than scientific<sup>1</sup>. Shelley himself was not a more eager humanitarian than Lucretius. His main object, as he asserts more than once, is to free the soul of man from superstitious fears by displaying the aspect and the laws of nature; and this is why he argues with such passionate earnestness against the immortality of the soul and the interference of the gods in human affairs. He values his atomic theory not so much for its truth, but because it gives, or professes to give, a natural explanation of phenomena generally attributed to supernatural agency. It appears that Lucretius lived long enough to complete in outline the task he had set before himself; but not one of the six books is complete and finished in detail.

Let us briefly examine the First Book from this point of view. (1) The noble prelude, so famous for its strength and beauty, has not escaped criticism with regard to the arrangement of its paragraphs<sup>2</sup>. (2) Later in the book there is a passage of nearly a hundred lines<sup>3</sup> where the course of the argument remains confused and unsatisfactory after all the labours of a generation of commentators. (3) There are a number of short passages hardly intelligible where they stand, of which the explanation follows in a different part of the poem. The inference to be drawn from this is not doubtful. While Lucretius was engaged upon the later parts of his work, it often struck him that the argument in hand might serve in an earlier discussion; whereupon he turned back and hastily inserted some provisional lines in his manuscript. In the

<sup>1</sup> See notes to ll. 54, 150, 931.

<sup>2</sup> See note on p. 39.

<sup>3</sup> Ll. 503-598. The difficulties are pointed out (but not explained) in the Notes.



course of revision he would have expanded or removed such insertions<sup>1</sup>.

With regard to the diction and metre of the poem, Lucretius deliberately adopted a style which must have seemed archaic to his contemporaries. This may be seen by comparing the *De Rerum Natura* with the *Peleus and Thetis* of Catullus, which was certainly written at nearly the same time. As Greek epic verse continued to the end to repeat the forms and vocabulary of Homer, so Lucretius chose for his model the *Annales* of Ennius, the one great epic which the language possessed, though two centuries had passed since it was written. At the beginning of his own poem he speaks with high admiration of Ennius, and often imitates even the few hundred lines of fragments which we possess. It is probable too that his archaism was intended as a protest against the tendency of contemporary writers. For in his time there was great literary activity among the Romans. Any educated man, Mommsen says, could turn out his five hundred hexameters at a sitting; Quintus Cicero wrote four tragedies in a fortnight to beguile the dulness of winter-quarters in Gaul. But most of this poetry was bad imitation of such second-rate models as Callimachus and the other academic poets of Alexandria. The pure taste of Lucretius, revolting from the predominant fashion, attached itself to Ennius and, through Ennius, to the great Greeks of a former age. His philosophical creed and his taste in literature alike led him to discard antiquarian and mythological lumber. The mythology he refused to believe, and he valued no learning except that which had power to relieve the life of man from unhappiness and degradation.

His archaism is seen both in language and in style. He uses old words and forms, from which Virgil selects with discrimination; and also—though this is often due to

<sup>1</sup> See Note to l. 146, and Index s.v. *Insertions*. Giussani was the first to insist on this sign of imperfection in the text of Lucretius.

metrical necessity—he coins words like Cato and Ennius before him. He is excessively fond of alliteration and assonance, which are so congenial to early Latin and occur so frequently in Ennius and still more in Plautus; here again Virgil declined to go to such lengths as his predecessors: the *Aeneid* is indeed full of alliteration, but the alliteration is not obtruded. His sentences are often exceedingly long and rather loosely constructed; he is indifferent to ambiguities which the Augustan poets would not have tolerated; and the position of words in his verse is unlike their practice<sup>1</sup>. Again his metre, though much more musical and beautiful than that of Ennius, is itself wanting in harmony and especially in variety, when compared with the rich perfection of Virgil's rhythm.

The difficulty of Lucretius, which even the ancients felt<sup>2</sup>, is due chiefly to the nature of the subject, but partly also to the inadequacy of the language as an instrument for expressing abstract ideas. Ennius had been able with rude vigour to depict the early history of Rome, to lay down a model of heroic verse for his successors, and to bequeath to them a considerable vocabulary. But the language was still, as Lucretius thrice over complains<sup>3</sup>, a very imperfect instrument for philosophic discussion or scientific argument. The measure of success which he attained is astonishing and must have been the reward of immense labour.

It has often been said that Lucretius was unfortunate in his choice of a subject; but one feels that for him it was impossible to write on any other. According to Milton, poetry should be simple, sensuous, impassioned; and it would be difficult for any poem consisting mainly of the exposition of a philosophical system, to deserve even one

<sup>1</sup> See Index under *Archaic forms, Alliteration, Assonance, Ambiguity, Emphatic position.*

<sup>2</sup> Quintilian *Inst. Or.* x 1, 87.

<sup>3</sup> See note to l. 139.

of these epithets. But Lucretius, while he shirked no stumbling-blocks, does not confine himself to the dry bones of his subject: he 'touches it all'—to use his own phrase—'with the charm of the Muses.' And so Fitzgerald wrote of him: 'I venerate the earnestness of the man, and the power with which he makes some music from his hardest Atoms.'

Whether or not he was ill-advised in his choice of a subject, his poem will continue to find readers as long as Latin is read at all. The greatness is in the man rather than in the theme. In the Atomic Theory there is much that is striking to the imagination; but after all it is the personality of Lucretius that makes his work a possession for ever—his unfailing enthusiasm, his perfect sincerity, his noble sadness, his poetic genius. Throughout the poem, and not least in the First Book, there are long passages where nothing is needed, and nothing is given, but orderly statement and appropriate argument—passages where, as Manilius says of his astronomy,

*Ornari res ipsa negat, contenta doceri*<sup>1</sup>.

But when the occasion comes and Lucretius lets himself go, he can rise to the level of the great Greeks. No poet has in a higher degree the power to be at once simple and sublime. Thus when he wishes to say that primitive man assigned to his gods a dwelling in the sky, this is how he says it:

In caeloque deum sedes et templa locarunt,  
Per caelum uolui quia nox et luna uidetur,  
Luna, dies et nox et noctis signa seuera,  
Noctiuagaeque faces caeli flammaeque uolantes,  
Nubila, sol, imbres, nix, uenti, fulmina, grando,  
Et rapidi fremitus et murmura magna minarum<sup>2</sup>.

To match such noble music as this, one must go back to Homer and to Pindar, or to the Book of Job itself.

<sup>1</sup> *Astron.* iii 39.

<sup>2</sup> Book v 1188-1193.

To his high qualities there is no lack of testimony. Few have known both ancient and modern literature as Macaulay did; and he says of Lucretius: 'In energy, perspicuity, variety of illustration, knowledge of life and manners, talent for description, sense of the beauty of the external world, and elevation and dignity of moral feeling, Lucretius had hardly ever an equal<sup>1</sup>.' Then Munro, as competent a judge as any man who ever lived, wrote thus in 1854:

'It would hardly perhaps do violence to the taste of the present age to call Lucretius the greatest of extant Latin poets....He has merits of his own unsurpassed in the whole compass of Latin poetry. It has often struck me that his genius is akin to that of Milton<sup>2</sup>. He displays a wonderful depth and fervour of thought, expressed in language of singular force and beauty; an admirable faculty of clear and vigorous and well-sustained philosophical reasoning; and a style equal in its purity and correctness to that of Terence, Caesar, or Cicero, and superior to that of any writer of the Augustan age<sup>3</sup>.'

And lastly Sellar, who seems to get near to the secret of that spell which Lucretius throws over his lovers, sums up his criticism thus:

'Lucretius stands alone as the great contemplative poet of antiquity. He has proclaimed with more power than any other the majesty of Nature's laws, and has interpreted with a truer and deeper insight the meaning of her manifold life. Few, if any, among his countrymen, felt so strongly the mystery of man's being, or have indicated so passionate a sympathy with the real sorrows of life, and so ardent a desire to raise man to his proper dignity, and to support him in bearing his inevitable burden....His powers of observation, thought, feeling, and

<sup>1</sup> *Life and Letters*, 1 p. 468.

<sup>2</sup> Giussani compares him to Dante.

<sup>3</sup> *Journal of Sacred and Classical Philology*, 1 p. 21.

imagination, are characterised by a remarkable vitality and sincerity. His strong intellectual and poetic faculty is united with some of the rarest moral qualities—fortitude, seriousness of spirit, love of truth, manly tenderness of heart<sup>1</sup>.

### III

#### THE LEYDEN MANUSCRIPTS OF LUCRETIUS

The text of Lucretius depends mainly upon two manuscripts which are now in the University Library of Leyden. Both belonged at one time to Isaac Vossius, a Dutch scholar who settled in England and died as a prebend of Windsor in 1689. Vossius, who was a native of Leyden, never published a collation of these manuscripts. When Vossius died, several learned bodies sought to acquire the library which contained these and other treasures. Evelyn wrote to Pepys on August 12, 1689: 'I wished with all my heart some brave and noble Maecenas would have made a present of them to Trinity College in Cambridge'; but the Maecenas was not forthcoming, and this laudable wish was not realised. Bentley, not yet Master of Trinity but residing at Oxford as tutor to young Stillingfleet, tried to secure the collection for the Bodleian; but the negotiations hung fire, and meanwhile the University of Leyden put money in its purse, stepped in, and carried off the prize.

But that once famous centre of learning made little use of their acquisition. The manuscripts lay on the shelf uncollated and unknown until 1725, when Havercamp used them for his edition of Lucretius published in that year. Havercamp had no inkling of their importance; and even his report of their readings was incomplete and inaccurate. But Lachmann has written this editor's epitaph: *Havercampum omni tempore omnes contempserunt*. Their true value was revealed by Lachmann himself in his edition

<sup>1</sup> *Roman Poets of the Republic*, p. 406.

of 1850. The MSS. were sent to Berlin for his use in April, 1846, and here at last was the man who could use them: he had all the needful qualifications—profound knowledge, diligence, and genius. He set the text of Lucretius once for all on a scientific basis, and in the next year he died. His work has been supplemented and corrected by Munro and others; but he remains and will remain the greatest editor of Lucretius.

One of these MSS. is a folio, the other a quarto. Hence they were called by Lachmann *Oblongus* and *Quadratus*; and the signs O and Q are used to designate the MSS. and their respective readings, and have been so used in the few critical notes subjoined to the text here printed.

The *Codex Vossianus Oblongus*, otherwise O, is older and better than Q: it is indeed one of the first of all Latin MSS. and deserves to rank with much earlier MSS. written in capitals, such as the Ambrosian of Plautus, the Eembine of Terence, and the *Mediceus* and *Vaticani* of Virgil. A photographic facsimile was published at Leyden in 1908, with a preface by the veteran palaeographer, M. Ém. Chatelain<sup>1</sup>.

O was written in the middle of the ninth century in the hand commonly used at that date in the Benedictine monasteries of France and Germany. Nothing is known of its history till 1479 when it was in the Cathedral library at Mainz. How it came into the possession of Isaac Vossius is not known. It has 20 lines to a page; very few contractions are used; an attempt is made, without much success, to separate the words; there are a few interlinear glosses of no value, but none after i 782. O has had several correctors, who can be distinguished chiefly by the different signs they used to mark mistakes. A Saxon or Irish corrector has in many places supplied missing lines

<sup>1</sup> What follows is mainly taken from Chatelain's preface. I have added a few details from personal knowledge of the facsimile.

or parts of lines; his additions can be readily identified owing to the great difference of his handwriting. These correctors left many gross errors without alteration or comment: thus in l. 1 of Book iii the true text is

*E tenebris tantis tam clarum extollere lumen;*

but O reads, with no sign of correction,

*O tenebris tantis tam clarum extollere flumen*<sup>1</sup>.

The spelling of O is remarkably good, and our present spelling of Latin has been influenced by it. Thus it preserves the writing of *est* as an enclitic, which is vouched for by the ancient grammarians: e.g. it has *patefactast* in i 10, *necesset* in i 146, *uisumst* in i 308. Yet the scribe betrays in many cases ignorance of the metre. For instance, Lucretius uses the genitive in *-āi* 114 times in nouns and three times in adjectives: the scribe regularly omits the last syllable and thus makes a line end with such a word as *materiā* or *uiā*. Again Lucretius is proved by metre to have used *nīl* and *nīlo*, never *nihil* or *nihilo*; but the scribe always used the longer forms, so that i 160 ends *nihil semine egeret*.

In O (but not in Q) there are occasional headings, each occupying a line, and intended to serve as a kind of table of contents. These are written in different and larger letters. But occasionally the scribe has mistaken a heading for a line of the poem, or a line of the poem for a heading<sup>2</sup>.

That O is older than Q is proved by the fact, that in Q four portions of the text (i 738-785, ii 253-304, ii 757-806, v 928-979) appear, not in their right places but together at the end of the poem. This shows that after O was written, four passages had fallen out of their right places in the MS. from which both O and Q were copied, and were inserted at the end before Q was copied. Now each of these passages consists of 52 lines, if the

<sup>1</sup> Q omits *E* but reads *lumen*.

<sup>2</sup> See note to l. 334.

headings mentioned above are reckoned in. Hence Lachmann drew two important conclusions: that each of these passages consists of one leaf of the original MS., and that it had 26 lines to a page.

Every extant MS. of Lucretius is derived from a single source, a manuscript written in small letters in France or Ireland in the 7th or 8th century. Had that manuscript perished before any copies were made, we should know nothing of Lucretius except the few single lines which happen to be quoted by later writers. And in that case our whole estimate of the Latin genius would have been materially lower than it actually is.

#### IV

#### BERNAYS AND GIUSSANI

Of Lachmann's work something was said above. Munro's edition, with its rich Introductions<sup>1</sup>, ample Commentary, and incomparable Translation, is known to every student of Lucretius. There remain two editors to whom I owe so much that I wish to speak briefly of them here.

JACOB BERNAYS, born at Hamburg in 1824, spent nearly all his life at Bonn and died there in 1881. A master of Greek learning, he would have added distinction to any chair in Europe, but he was never elected to a professorship: his whole life was devoted to the acquisition of knowledge and the writing of books. It is reported of Ingram Bywater that he never mentioned the name of

<sup>1</sup> The late Sir Godfrey Lushington, as an official in the Home Department, had at one time the duty of deciding whether condemned criminals should be hanged or reprieved. He told me that in the intervals of studying the documents concerning such cases, no reading gave such relief to his tension of mind as the two Introductions in Munro's *Lucretius*.



Bernays in lecture without lifting his cap; and Bernays was indeed no ordinary scholar. To great learning, never a rarity in Germany, he added an acuteness of mind, a catholicity of interest, and a sense of form, which are rare in any country. He had no racial or religious exclusiveness: though a devout Jew, he did not hate Christians; though a German, he did not despise English scholarship. Most of his books are short: they deal in about a hundred pages with some problem of history or philosophy; and it is hard to say whether the matter or the form of these little masterpieces is more admirable.

His first publication, in 1847, dealt with the text of Lucretius<sup>1</sup>. Five years later his text of the whole poem was published by Teubner. In 1853 he was working at a commentary on Lucretius, intended for the Clarendon Press; and even that great institution might have been proud to publish it. But not a single sheet of it ever reached Oxford: he laid it aside, and the remonstrances of his friends could never persuade him to complete it. What he had prepared for print was first published in 1885<sup>2</sup>, four years after his death; and it ends at l. 685 of the First Book. Everything intended for print Bernays wrote out at least three times with his own hand; and the perfection of form that marks this fragment is the reward of such pains. Every word tells. The Latin notes are generally very brief, though there are plenty of them. But at times he quotes a long text of Epicurus, emends it perhaps, translates it into perspicuous Latin, and explains it. Every lover of Lucretius must regard it as a real misfortune that Bernays never completed this commentary.

CARLO GIUSSANI was born at Milan in 1840 and studied in Germany, giving his attention chiefly to Oriental Languages. In 1876 he was appointed Professor of Latin

<sup>1</sup> *De emendatione Lucretii* (Rheinisches Museum, v 533).

<sup>2</sup> *Gesammelte Abhandlungen*, edited by Usener, Berlin, 1885. The commentary is printed in vol. II pp. 1-67.

at Milan. He published his edition of Lucretius in 1896<sup>1</sup> and followed it up with his *Note Lucreziane* in 1899; the second book is a reply to the critics of the first. He died at Milan in 1900.

Giussani's work differs in many ways from that of Bernays. Though never clumsy or pedantic, he takes no pains about the presentation of his matter and has no power to state an argument concisely. His commentary, with the preliminary volume of essays, and the supplementary volume of answers to critics, runs to such a length that it is not likely ever to be translated into English. He was too ready to resort to transpositions of the text. He can hardly be called a good Latin scholar: he sometimes mistook the meaning of words and even disfigured his text by false quantities. And yet, in spite of these deficiencies, it may be said that he revolutionised the study of Lucretius. He did this by turning the searchlight of a wonderfully acute intellect upon all the places where the sequence of thought had not been made clear by previous interpreters; and he succeeded again and again where others had failed: *uiuida wis animi peruicit*. The ingenious are too apt to discover mare's-nests; but it seems to me that Giussani, for all his wonderful ingenuity, found few such. In appreciation of Lucretius, either as reasoner or as poet, he is inferior to none of the commentators, and his name will not be forgotten while the *De Rerum Natura* is studied.

<sup>1</sup> Four volumes, Torino (Ermanno Loescher), 1896.

T. LVCRETI CARI  
DE RERVM NATVRA

LIBER PRIMVS

Aeneadum genetrix, hominum diuomque uoluptas,  
Alma Venus, caeli subter labentia signa  
Quae mare nauigerum, quae terras frugiferentis  
Concelebras, per te quoniam genus omne animantum  
Concipitur uisitque exortum lumina solis: 5  
Te, dea, te fugiunt uenti, te nubila caeli  
Aduentumque tuum, tibi suauis daedala tellus  
Submittit flores, tibi rident aequora ponti,  
Placatumque nitet diffuso lumine caelum.  
Nam, simul ac species patefactast uerna diei 10  
Et reserata uiget genitabilis aura Fauoni,  
Aeriae primum uolucres te, diua, tuumque  
Significant initum, percussae corda tua ui;  
Inde ferae pecudes persultant pabula laeta  
Et rapidos tranant amnis: ita capta lepore 15  
Te sequitur cupide quo quamque inducere pergis.  
Denique, per maria ac montis fluuiosque rapacis  
Frondiferasque domos auium camposque uirentis,  
Omnibus incutiens blandum per pectora amorem,  
Efficis ut cupide generatim saecula propagent. 20  
Quae quoniam rerum naturam sola gubernas,  
Nec sine te quicquam dias in luminis oras  
Exoritur, neque fit laetum neque amabile quicquam,  
Te sociam studeo scribendis uersibus esse,

Quos ego de rerum natura pangere conor 25  
 Memmiadae nostro, quem tu, dea, tempore in omni  
 Omnibus ornatum uoluisti excellere rebus:  
 Quo magis aeternum da dictis, diua, leporem.  
 Effice ut interea fera moenera militiai  
 Per maria ac terras omnis sopita quiescant. 30  
 Nam tu sola potes tranquilla pace iuuare  
 Mortalis, quoniam belli fera moenera Mauors  
 Armipotens regit, in gremium qui saepe tuum se  
 Reicit, aeterno deuictus uulnere amoris,  
 Atque ita suspiciens, tereti ceruice reposta, 35  
 Pascit amore auidos inhians in te, dea, uisus,  
 Eque tuo pendet resupini spiritus ore.  
 Hunc tu, diua, tuo recubantem corpore sancto  
 Circumfusa super, suavis ex ore loquellas  
 Funde, petens placidam Romanis, incluta, pacem. 40  
 Nam neque nos agere hoc patriai tempore iniquo  
 Possumus aequo animo, nec Memmi clara propago  
 Talibus in rebus communi desse saluti.

\* \* \* \* \*

Quod superest, uacuas auris animumque sagacem 50  
 Semotum a curis adhibe ueram ad rationem,  
 Ne mea dona, tibi' studio disposta fideli,  
 Intellecta prius quam sint, contempta relinquant.  
 Nam tibi de summa caeli ratione deumque  
 Disserere incipiam, et rerum primordia pandam, 55  
 Vnde omnis natura creet res auctet alatque,  
 Quoue eadem rursus natura perempta resoluat;  
 Quae nos materiem et genitalia corpora rebus  
 Reddunda in ratione uocare et semina rerum

44-49 = II 646-651 *seclisit Pontanus, lacunam indicauit Lachmann.*

Appellare suemus, et haec eadem usurpare 60  
Corpora prima, quod ex illis sunt omnia primis.

Humana ante oculos foede cum uita iaceret  
In terris, oppressa graui sub religione,  
Quae caput a caeli regionibus ostendebat,  
Horribili super aspectu mortalibus instans, 65  
Primum GRAIUS HOMO mortalis tollere contra  
Est oculos ausus primusque obsistere contra;  
Quem neque fama deum nec fulmina nec minitanti  
Murmure compressit caelum, sed eo magis acrem  
Inritat animi uirtutem, effringere ut arta 70  
Naturae primus portarum claustra cupiret.  
Ergo uiuida uis animi peruicit, et extra  
Processit longe flammantia moenia mundi,  
Atque omne immensum peragrauit mente animoque;  
Vnde refert nobis uictor, quid possit oriri, 75  
Quid nequeat, finita potestas denique cuique  
Quanam sit ratione atque alte terminus haerens.  
Quare religio pedibus subiecta uicissim  
Obteritur, nos exaequat uictoria caelo.

Illud in his rebus uereor, ne forté rearis 80  
Impia te rationis inire elementa uiamque  
Indugredi sceleris. Quod contra saepius illa  
Religio peperit scelerosa atque impia facta.  
Aulide quo pacto Triuii uirginis aram  
Iphianassai turparunt sanguine foede 85  
Ductores Danaum delecti, prima uirorum.  
Cui simul infula, uirgineos circumdata comptus,  
Ex utraque pari malarum parte profusast,  
Et maestum simul ante aras adstare parentem

Sensit, et hunc propter ferrum celare ministros, 90  
 Aspectuque suo lacrimas effundere ciuis,  
 Muta metu terram genibus summissa petebat.  
 Nec miserae prodesse in tali tempore quibat,  
 Quod patrio princeps donarat nomine regem.  
 Nam sublata uirum manibus tremibundaque ad aras 95  
 Deductast, non ut, sollemni more sacrorum  
 Perfecto, posset claro comitari Hymenaeo,  
 Sed casta inceste, nubendi tempore in ipso,  
 Hostia concideret mactatu maesta parentis,  
 Exitus ut classi felix faustusque daretur! 100  
 Tantum religio potuit suadere malorum!

Tutemet a nobis iam quouis tempore, uatum  
 Terriloquis uictus dictis, desciscere quaeres.  
 Quippe etenim quam multa tibi iam fingere possunt  
 Somnia, quae uitae rationes uertere possint 105  
 Fortunasque tuas omnis turbare timore!  
 Et merito: nam, si certam finem esse uiderent  
 Aerumnarum homines, aliqua ratione ualerent  
 Religionibus atque minis obsistere uatum.  
 Nunc ratio nulla est restandi, nulla facultas, 110  
 Aeternas quoniam poenas in morte timendumst.  
 Ignoratur enim quae sit natura animai,  
 Nata sit an contra nascentibus insinuetur,  
 Et simul intereat nobiscum, morte dirempta,  
 An tenebras Orci uisat uastasque lacunas, 115  
 An pecudes alias diuinitus insinuet se,  
 Ennius ut noster cecinit, qui primus amoeno  
 Detulit ex Helicone perenni fronde coronam,  
 Per gentis Italas hominum quae clara clueret;  
 Etsi praeterea tamen esse Acherusia templa 120

Ennius aeternis exponit uersibus edens,  
 Quo neque permaneant animae neque corpora nostra,  
 Sed quaedam simulacra, modis pallentia miris;  
 Vnde sibi exortam semper florentis Homeri  
 Commemorat speciem lacrimas effundere salsas 125  
 Coepisse, et rerum naturam expandere dictis.  
 Quapropter bene cum superis de rebus habenda  
 Nobis est ratio, solis lunaeque meatus  
 Qua fiant ratione, et qua ui quaeque gerantur  
 In terris, tum cum primis ratione sagaci 130  
 Vnde anima atque animi constet natura uidendum,  
 Et quae res nobis uigilantibus obuia mentes  
 Terrificet morbo adfectis, somnoque sepultis,  
 Cernere uti uideamur eos audireque coram,  
 Morte obita quorum tellus amplectitur ossa. 135

Nec me animi fallit Graiorum obscura reperta  
 Difficile inlustrare Latinis uersibus esse,  
 Multa nouis uerbis praesertim cum sit agendum  
 Propter egestatem linguae et rerum nouitatem.  
 Sed tua me uirtus tamen, et sperata uoluptas 140  
 Suauis amicitiae, quemuis sufferre laborem  
 Suadet, et inducit noctes uigilare serenas,  
 Quaerentem dictis quibus et quo carmine demum  
 Clara tuae possim praepandere lumina menti,  
 Res quibus occultas penitus conuisere possis. 145

Hunc igitur terrorem animi tenebrasque necesest  
 Non radii solis nec lucida tela diei  
 Discussant, sed naturae species ratioque.  
 Principium cuius hinc nobis exordia sumet,

Nullam rem e nilo gigni diuinitus umquam. 150

Quippe ita formido mortalis continet omnis,

Quod multa in terris fieri caeloque tuentur,

Quorum operum causas nulla ratione uidere

Possunt, ac fieri diuino numine rentur.

Quas ob res, ubi uiderimus nil posse creari 155

De nilo, tum quod sequimur iam rectius inde

Perspiciemus—et unde queat res quaeque creari,

Et quo quaeque modo fiant opera sine diuom.

(i) Nam, si de nilo fierent, ex omnibu' rebus

Omne genus nasci posset, nil semine egeret. 160

E mare primum homines, e terra posset oriri

Squamigerum genus, et uolucres erumpere caelo;

Armenta atque aliae pecudes, genus omne ferarum,

Incerto partu, culta ac deserta tenerent.

Nec fructus idem arboribus constare solerent, 165

Sed mutarentur: ferre omnes omnia possent.

Quippe, ubi non essent genitalia corpora cuique,

Qui posset mater rebus consistere certa?

At nunc, seminibus quia certis quaeque creantur,

Inde enascitur atque oras in luminis exit, 170

Materies ubi inest cuiusque et corpora prima;

Atque hac re nequeunt ex omnibus omnia gigni,

Quod certis in rebus inest secreta facultas.

(ii) Praeterea, cur uere rosam, frumenta calore,

Vuas autumnno fundi suadente uidemus, 175

Si non, certa suo quia tempore semina rerum

Cum confluerunt, patefit quodcumque creatur,

Dum tempestates adsunt et uiuida tellus

Tuto res teneras effert in luminis oras?



- Quodsi de nilo fierent, subito exorerentur 180  
 Incerto spatio atque alienis partibus anni,  
 Quippe ubi nulla forent primordia, quae genitali  
 Concilio possent arceri tempore iniquo.
- (iii) Nec, porro, augendis rebus spatio foret usus,  
 Seminis ad coitum, si e nilo crescere possent. 185  
 Nam fierent iuuenes subito ex infantibu' paruis,  
 E terraque exorta repente arbusta salirent.  
 Quorum nil fieri manifestum est, omnia quando  
 Paulatim crescunt, ut par est, *tempore certo*  
*Res quoniam crescunt omnes de semine certo,*  
 Crescentesque genus seruant; ut noscere possis, 190  
 Quicque sua de materia grandescere alicue.
- (iv) Huc accedit, uti sine certis imbris anni  
 Laetificos nequeat fetus submittere tellus,  
 Nec porro, secreta cibo, natura animantum  
 Propagare genus possit uitamque tueri; 195  
 Vt potius multis communia corpora rebus  
 Multa putes esse, ut uerbis elementa uidemus,  
 Quam sine principiis ullam rem existere posse.
- (v) Denique, cur homines tantos natura parare  
 Non potuit, pedibus qui pontum per uada possent 200  
 Transire, et magnos manibus diuellere montis,  
 Multaque uiuendo uitalia uincere saecula,  
 Si non, materies quia rebus reddita certa est  
 Gignundis, e qua constat quid possit oriri?  
 Nil igitur fieri de nilo posse fatendumst, 205  
 Semine quando opus est rebus, quo quaeque creatae  
 Aeris in teneras possint proferrier auras.
- (vi) Postremo, quoniam incultis praestare uidemus

189 lacunam indicauit et uersum suppleuit Munro.

207 possint Pontanus, possent OQ.

Culta loca et manibus melioris reddere fetus,  
 Esse uidelicet in terris primordia rerum, 210  
 Quae nos, fecundas uertentes uomere glebas  
 Terraique solum subigentes, cimus ad ortus.  
 Quodsi nulla forent, nostro sine quaeque labore  
 Sponte sua multo fieri meliora uideres.

Huc accedit, uti quicque in sua corpora rursum 215  
 Dissoluat natura, neque ad nilum interimat res.

(i) Nam, siquid mortale e cunctis partibus esset,  
 Ex oculis res quaeque repente erepta periret:  
 Nulla ui foret usus enim, quae partibus eius  
 Discidium parere et nexus exsoluere posset. 220

Quod nunc, aeterno quia constant semine quacque,  
 Donec uis obiit, quae res diuerberet ictu  
 Aut intus penetret per inania dissoluatque,  
 Nullius exitium patitur natura uideri.

(ii) Praeterea, quaecumque uetustate amouet aetas, 225  
 Si penitus perimit, consumens materiem omnem,  
 Vnde animale genus generatim in lumina uitae

Redducit Venus? aut reductum daedala tellus  
 Vnde alit atque auget, generatim pabula praebens?  
 Vnde mare ingenui fontes externaque longe 230

Flumina suppeditant? Vnde aether sidera pascit?  
 Omnia enim debet, mortali corpore quae sunt,  
 Infinita aetas consumpse anteacta diesque.

Quodsi in eo spatium atque anteacta aetate fuere,  
 E quibus haec rerum consistit summa relecta, 235  
 Inmortali sunt natura praedita certe:

Haud igitur possunt ad nilum quaeque reuerti.

(iii) Denique, res omnis eadem uis causaque uolgo  
 Conficeret, nisi materies aeterna teneret,

- Inter se nexu minus aut magis indupedita. 240  
 Tactus enim leti satis esset causa profecto,  
 Quippe ubi nulla forent aeterno corpore, quorum  
 Contextum uis deberet dissoluere quaeque.  
 At nunc, inter se quia nexus principiorum  
 Dissimiles constant aeternaque materies est, 245  
 Incolumi remanent res corpore, dum satis acris  
 Vis obeat pro textura cuiusque reperta.  
 Haud igitur redit ad nilum res ulla, sed omnes  
 Discidio redeunt in corpora materiali.
- (iv) Postremo, pereunt imbres, ubi eos pater aether 250  
 In gremium matris terrai praecipitauit;  
 At nitidae surgunt fruges, ramiue uirescunt  
 Arboribus, crescunt ipsae fetuque grauantur;  
 Hinc alitur porro nostrum genus atque ferarum,  
 Hinc laetas urbes pueris florere uidemus 255  
 Frondiferasque nouis auibus canere undique siluas;  
 Hinc fessae pecudes pingui per pabula laeta  
 Corpora deponunt, et candens lacteus umor  
 Vberibus manat distentis; hinc noua proles  
 Artubus infirmis teneras lasciua per herbas 260  
 Ludit, lacte mero mentes perculsa nouellas.  
 Haud igitur penitus pereunt quaecumque uidentur,  
 Quando alid ex alio reficit natura, nec ullam  
 Rem gigni patitur nisi morte adiuta aliena.
- Nunc age, res quoniam docui non posse creari 265  
 De nilo, neque item genitas ad nil reuocari,  
 Nequa forte tamen coeptes diffidere dictis,  
 Quod nequeunt oculis rerum primordia cerni,  
 Accipe, praeterea quae corpora tute necessesit  
 Confiteare esse in rebus nec posse uideri. 270

- (i) Principio, uenti uis uerberat incita pontum  
 Ingentisque ruit nauis et nubila differt;  
 Interdum, rapido percurrens turbine campos,  
 Arboribus magnis sternit, montisque supremos  
 Siluifragis uexat flabris: ita perfurit acri 275  
 Cum fremitu saeuitque minaci murmure uentus.  
 Sunt igitur uenti nimirum corpora caeca,  
 Quae mare, quae terras, quae denique nubila caeli  
 Verrunt ac subito uexantia turbine raptant.  
 Nec ratione fluunt alia stragemque propagant 280  
 Et cum mollis aquae fertur natura repente  
 Flumine abundantanti, quam largis imbribus auget  
 Montibus ex altis magnus decursus aquai,  
 Fragmina coniciens siluarum arbustaque tota;  
 Nec ualidi possunt pontes uenientis aquai 285  
 Vim subitam tolerare: ita magno turbidus imbri  
 Molibus incurrit ualidis cum uiribus amnis.  
 Dat sonitu magno stragem, uoluitque sub undis  
 Grandia saxa; ruit, qua quicquid fluctibus obstat.  
 Sic igitur debent uenti quoque flamina ferri, 290  
 Quae, ueluti ualidum cum flumen procubuere  
 Quamlibet in partem, trudent res ante ruuntque  
 Impetibus crebris, interdum uertice torto  
 Corripiunt rapideque rotanti turbine portant.  
 Quare etiam atque etiam sunt uenti corpora caeca, 295  
 Quandoquidem factis et moribus aemula magnis  
 Annibus inueniuntur, aperto corpore qui sunt.
- (ii) Tum porro, uarios rerum sentimus odores,  
 Nec tamen ad naris uenientis cernimus umquam,

271 pontum *Marullus*, cortus *OQ*.

276 uentus *Markland*, pontus *OQ*.

294 rapideque *Lachmann*, rapideque *OQ* *Ernout soloece*.

- Nec calidos aestus tuimur, nec frigora quimus 300  
 Vsurpare oculis, nec uoces cernere suemus;  
 Quae tamen omnia corporea constare necessest  
 Natura, quoniam sensus impellere possunt.  
 Tangere enim et tangi, nisi corpus, nulla potest res.
- (iii) Denique, fluctifrago suspensae in litore uestes 305  
 Vuescunt, caedem dispensae in sole serescunt;  
 At neque, quo pacto persederit umor aquai,  
 Visumst, nec rursum quo pacto fugerit aestu.  
 In paruas igitur partis dispergitur umor,  
 Quas oculi nulla possunt ratione uidere. 310
- (iv) Quin etiam, multis solis redeuntibus annis,  
 Anulus in digito subter tenuatur habendo,  
 Stilicidi casus lapidem cauat, uncus aratri  
 Ferreus occulte decrescit uomer in aruis,  
 Strataque iam uolgi pedibus detrita uiarum 315  
 Saxea conspicimus; tum, portas propter, aena  
 Signa manus dextras ostendunt adtenuari  
 Saepe salutantum tactu praeterque meantum.  
 Haec igitur minui, cum sunt detrita, uidemus;  
 Sed, quae corpora decedant in tempore quoque, 320  
 Inuida praecusit speciem natura uidendi.
- (v) Postremo, quaecumque dies naturaque rebus  
 Paulatim tribuit, moderatim crescere cogens,  
 Nulla potest oculorum acies contenta tueri;  
 Nec porro quaecumque aeuo macieque senescunt, 325  
 Nec mare quae impendent uestro sale saxa peresa,  
 Quid quoque amittant in tempore cernere possis.  
 Corporibus caecis igitur natura gerit res.

Nec tamen undique corporea stipata tenentur

319 sunt *scripsi*, sint *OQ*.

- Omnia natura; namque est in rebus inane. 330  
 Quod tibi cognosse in multis erit utile rebus,  
 Nec sinet errantem dubitare, et quaerere semper  
 De summa rerum et nostris diffidere dictis.
- (i) Quod si non esset, nulla ratione moueri 335  
 Res possent; namque officium quod corporis exstat,  
 Officere atque obstare, id in omni tempore adesset  
 Omnibus; haud igitur quicquam procedere posset,  
 Principium quoniam cedendi nulla daret res.  
 At nunc per maria ac terras sublimaque caeli 340  
 Multa modis multis, uaria ratione, moueri  
 Cernimus ante oculos; quae, si non esset inane,  
 Non tam sollicito motu priuata carerent,  
 Quam genita omnino nulla ratione fuissent,  
 Vndique materies quoniam stipata quiesset. 345
- (ii) Praeterea, quamuis solidae res esse putentur,  
 Hinc tamen esse licet raro cum corpore cernas:  
 In saxis ac speluncis permanat aquarum  
 Liquidus umor, et uberibus flent omnia guttis;  
 Dissipat in corpus sese cibus omne animantum; 350  
 Crescunt arbusta et fetus in tempore fundunt,  
 Quod cibus in totas usque ab radicibus imis  
 Per truncos ac per ramos diffunditu omnis;  
 Inter saepta meant uoces et clausa domorum  
 Transuolitant; rigidum permanat frigus ad ossa. 355  
 Quod, nisi inania sint qua possent corpora quaeque  
 Transire, haud ulla fieri ratione uideres.
- (iii) Denique, cur alias aliis praestare uidemus  
 Pondere res rebus, nilo maiore figura?  
 Nam si tantundemst in lanae glomere quantum 360  
 Corporis in plumbo est, tantundem pendere par est,

334 Quapropter locus est intactus inane uacansque *delebat*  
*Beniley.*

356, 357 *sic interpunxit Brieger.*

Corporis officium est quoniam premere omnia deorsum :  
 Contra autem natura manet sine pondere inanis ;  
 Ergo quod magnum est aequae leuiusque uidetur,  
 Nimirum plus esse sibi declarat inanis ; 365  
 At contra grauius plus in se corporis esse  
 Dedicat, et multo uacui minus intus habere.  
 Est igitur nimirum id quod ratione sagaci  
 Quaerimus, admixtum rebus, quod inane uocamus.

Illud in his rebus ne te deducere uero 370

Possit, quod quidam fingunt, praecurrere cogor.

- (i) Cedere squamigeris latices nitentibus aiunt  
 Et liquidas aperire uias, quia post loca pisces  
 Linqunt, quo possint cedentes confluere undae ;  
 Sic alias quoque res inter se posse moueri 375  
 Et mutare locum, quamuis sint omnia plena.  
 Scilicet id falsa totum ratione receptumst.  
 Nam quo squamigeri poterunt procedere tandem,  
 Ni spatium dederint latices? Concedere porro  
 Quo poterunt undae, cum pisces ire nequibunt? 380  
 Aut igitur motu priuandumst corpora quaeque,  
 Aut esse admixtum dicendumst rebus inane,  
 Vnde initum primum capiat res quaeque mouendi.

- (ii) (a) Postremo, duo de concursu corpora lata  
 Si cita dissiliant, nempe aer omne necessesst, 385  
 Inter corpora quod fiat, possidat inane:  
 Is porro quamuis circum celerantibus auris  
 Confluat, haud poterit tamen uno tempore totum  
 Compleri spatium; nam primum quemque necessesst  
 Occupet ille locum, deinde omnia possideantur. 390
- (b) Quodsi forte aliquis, cum corpora dissilueret,  
 Tum putat id fieri quia se condenseat aer,

Errat; nam uacuum tum fit quod non fuit ante,  
 Et repletur item uacuum quod constitit ante.  
 Nec tali ratione potest denserier aer; 395  
 Nec, si iam posset, sine inani posset, opinor,  
 Ipse in se trahere et partis conducere in unum.

Quapropter, quamuis causando multa moreris,  
 Esse in rebus inane tamen fateare necessest.  
 Multaque praeterea tibi possum commemorando 400  
 Argumenta fidem dictis conradere nostris.  
 Verum animo satis haec uestigia parua sagaci  
 Sunt, per quae possis cognoscere cetera tute.  
 Namque, canes ut montiuagae persaepe ferai  
 Naribus inueniunt intectas fronde quietes, 405  
 Cum semel institerunt uestigia certa uiui,  
 Sic alid ex alio per te tute ipse uidere  
 Talibus in rebus poteris, caecasque latebras  
 Insinuare omnis, et uerum protrahere inde.  
 Quod si pigraris paulumue recesseris ab re, 410  
 Hoc tibi de plano possum promittere, Memmi:  
 Vsque adeo largos haustus e fontibu' magnis  
 Lingua meo suauis diti de pectore fundet,  
 Vt uerear, ne tarda prius per membra senectus  
 Serpat, et in nobis uitai claustra resoluat, 415  
 Quam tibi de quauis una re uersibus omnis  
 Argumentorum sit copia missa per auris.

Sed, nunc ut repetam coeptum pertexere dictis,

- (i) Omnis ut est, igitur, per se natura duabus  
 Constitit in rebus; nam corpora sunt, et inane, 420  
 Haec in quo sita sunt, et qua diuersa mouentur.  
 (a) Corpus enim per se communis dedicat esse



Sensus, cui nisi prima fides fundata ualebit,  
 Haud erit, occultis de rebus quo referentes  
 Confirmare animi quicquam ratione queamus. 425

(b) Tum porro, locus ac spatium, quod inane uocamus,  
 Si nullum foret, haud usquam sita corpora possent  
 Esse, neque omnino quoquam diuersa meare;  
 Id quod iam supera tibi paulo ostendimus ante.

(ii) Praeterea nil est, quod possis dicere ab omni 430  
 Corpore seiunctum secretumque esse ab inani,  
 Quod quasi tertia sit numero natura reperta.

(a) Nam quodcumque erit, esse aliquid debet id ipsum:  
 Cui si tactus erit quamuis leuis exiguusque, [435]  
 Augmine uel grandi uel paruo denique, dum sit, 435 [434]  
 Corporis augebit numerum summamque sequetur;  
 Sin intactile erit, nulla de parte quod ullam  
 Rem prohibere queat per se transire meantem,  
 Scilicet hoc id erit, uacuum quod inane uocamus.

(b) Praeterea, per se quodcumque erit, aut faciet quid, 440  
 Aut aliis fungi debet agentibus ipsum,  
 Aut erit ut possint in eo res esse gerique;  
 At facere et fungi sine corpore nulla potest res,  
 Nec praebere locum porro nisi inane uacansque.  
 Ergo, praeter inane et corpora, tertia per se 445  
 Nulla potest rerum in numero natura relinqui,  
 Nec quae sub sensus cadat ullo tempore nostros,  
 Nec ratione animi quam quisquam possit apisci.

Nam quaecumque cluent, aut his coniuncta duabus  
 Rebus ea inuenies, aut harum euenta uidebis. 450

435, 434 *transposuit Lachmann.*

442 possint *edd.*, possunt *OQ Munro.*

443 nise corpora *Housman.*

450 harum *Bernays*, horum *OQ.*

- (i) Coniunctum est id quod nusquam sine perinitiali  
 Discidio potis est seiungi seque gregari,  
 Pondus uti saxist, calor ignis, liquor aquai.
- (ii) Seruitium contra, paupertas diuitiaeque, 455  
 Libertas, bellum, concordia, cetera, quorum  
 Aduentu manet incolumis natura abituque—  
 Haec soliti sumus, ut par est, euenta uocare.
- (a) Tempus item per se non est; sed rebus ab ipsis  
 Consequitur sensus, transactum quid sit in aeuo, 460  
 Tum quae res instet, quid porro deinde sequatur.  
 Nec per se quemquam tempus sentire fatendumst,  
 Semotum ab rerum motu placidaque quiete.
- (b) Denique, Tyndaridem raptam belloque subactas  
 Troiugenas gentis cum dicunt esse, uidendumst 465  
 Ne forte haec per se cogant nos esse fateri,  
 Quando ea saecla hominum, quorum haec euenta  
 fuerunt,  
 Inreuocabilis abstulerit iam praeterita aetas.  
 Namque aliud terris, aliud regionibus ipsis  
 Euentum dici poterit, quodcumque erit actum. 470
- (c) Denique, materies si rerum nulla fuisset,  
 Nec locus ac spatium, res in quo quaeque geruntur,  
 Numquam, Tyndaridis formae conflatus amore,  
 Ignis, Alexandri Phrygio sub pectore gliscens,  
 Clara accendisset saeui certamina belli; 475  
 Nec clam durateus Troianis Pergama partu  
 Inflammasset equus nocturno Graiugenarum:  
 Perspicere ut possis res gestas funditus omnis

453 saxist *Lachmann*, saxis *OQ*.

454 Tactus corporibus cunctis intactus inani *seclusit Lachmann*.

473 formae *Q*, forma *O*. amore *OQ*, amoris *Wakefield*.

Non ita uti corpus per se constare neque esse,  
 Nec ratione cluere eadem, qua constet inane, 480  
 Sed magis ut merito possis euenta uocare  
 Corporis, atque loci, res in quo quaeque gerantur.

Corpora sunt porro partim primordia rerum,  
 Partim concilio quae constant principiorum.  
 Sed quae sunt rerum primordia, nulla potest uis 485  
 Stinguere; nam solido uincunt ea corpore demum.  
 Etsi difficile esse uidetur credere quicquam  
 In rebus solido reperiri corpore posse.  
 Transit enim fulmen caeli per saepta domorum,  
 Clamor ut ac uoces; ferrum candescit in igni, 490  
 Dissiliuntque fere feruenti saxa uapore;  
 Cum labefactatus rigor auri soluitur aestu,  
 Tum glacies aeris flamma deuicta liquescit;  
 Permanat calor argentum penetraleque frigus,  
 Quando utrumque manu retinentes pocula rite 495  
 Sensimus, infuso lympharum rore superne.  
 Vsque adeo in rebus solidi nil esse uidetur.  
 Sed, quia uera tamen ratio naturaque rerum  
 Cogit, ades, paucis dum uersibus expediamus,  
 Esse ea quae solido atque aeterno corpore constant, 500  
 Semina quae rerum primordiaque esse docemus,  
 Vnde omnis rerum nunc constet summa creata.

Principio, quoniam duplex natura duarum  
 Dissimilis rerum longe constare repertast—  
 Corporis, atque loci, res in quo quaeque geruntur, 505  
 Esse utramque sibi per se puramque necessest.

(i) (a) Nam, quacumque uacat spatium, quod inane uocamus,

491 fere *Housman*, fero *OQ*. 492 Cum *OQ* *Ernout*, Tum *edd*.

Corpus ea non est; qua porro cumque tenet se  
 Corpus, ea uacuum nequaquam constat inane.  
 Sunt igitur solida ac sine inani corpora prima. 510

(b) Praeterea, quoniam genitis in rebus inanest,  
 Materiem circum solidam constare necessesit;  
 Nec res ulla potest uera ratione probari  
 Corpore inane suo celare atque intus habere,  
 Si non, quod cohibet, solidum constare relinquant: 515

Id porro nil esse potest nisi materiai  
 Concilium, quod inane queat rerum cohibere.  
 (Materies igitur, solido quae corpore constat,  
 Esse aeterna potest, cum cetera dissoluantur.)

(ii) (a) Tum porro, si nil esset quod inane uocaret, 520  
 Omne foret solidum; nisi, contra, corpora certa  
 Essent, quae loca completerent quaecumque tenerent,  
 Omne quod est spatium, uacuum constaret inane.

Alternis igitur nimirum corpus inani  
 Distinctumst, quoniam nec plenum nauiter extat 525

Nec porro uacuum. Sunt ergo corpora certa,  
 Quae spatium pleno possint distinguere inane.

Haec neque dissolui plagis extrinsecus icta  
 Possunt, nec porro penitus penetrata retexi,  
 Nec ratione queunt alia temptata labare; 530

Id quod iam supra tibi paullo ostendimus ante.  
 Nam neque collidi sine inani posse uidetur  
 Quicquam, nec frangi, nec findi in bina secando,  
 Nec capere umorem neque item manabile frigus  
 Nec penetralem ignem, quibus omnia conficiuntur. 535

Et quo quaeque magis cohibet res intus inane,  
 Tam magis his rebus penitus temptata labascit.  
 Ergo, si solida ac sine inani corpora prima

Sunt ita uti docui, sint haec aeterna necessest.

- (b) Praeterea, nisi materies aeterna fuisset, 540  
 Antehac ad nilum penitus res quaeque redissent,  
 De niloque renata forent quaecumque uidemus.  
 At, quoniam supra docui nil posse creari  
 De nilo, neque quod genitum est ad nil reuocari,  
 Esse inmortalia primordia corpore debent, 545  
 Dissolui quo quaeque supremo tempore possint,  
 Materies ut suppeditet rebus reparandis.  
 Sunt igitur solida primordia simplicitate,  
 Nec ratione queunt alia seruata per aeuom  
 Ex infinito iam tempore res reparare. 550

- (i) Denique, si nullam finem natura parasset  
 Frangendis rebus, iam corpora materiai  
 Vsque redacta forent, aeuo frangente priore,  
 Vt nil ex illis a certo tempore posset  
 Conceptum summum aetatis peruadere *ad auctum*. 555  
 Nam quiduis citius dissolui posse uidemus  
 Quam rursus refici; quapropter longa dies et  
 Infinita aetas anteacti temporis omnis  
 Quod fregisset adhuc, disturbans dissoluensque,  
 Numquam relicuo reparari tempore posset. 560  
 At nunc nimirum frangendi reddita finis  
 Certa manet, quoniam refici rem quamque uidemus,  
 Et finita simul generatim tempora rebus  
 Stare, quibus possint aeui contingere florem.
- (ii) Huc accedit, uti, solidissima materiai 565  
 Corpora cum constant, possint tamen omnia reddi,

542 que renata *Lambinus*, quaerant a forent *O*.

555 ad auctum *Munro*, finis *O*, fine *Q*.

557 dies et *Madvig*, diei *OQ*.

Mollia quae fiunt, aer, aqua, terra, uapores,  
 Quo pacto fiant, et qua ui quaeque gerantur,  
 Admixtum quoniam semel est in rebus inane.  
 At contra, si mollia sint primordia rerum, 570  
 Vnde queant ualidi silices ferrumque creari,  
 Non poterit ratio reddi; nam funditus omnis  
 Principio fundamenti natura carebit.  
 Sunt igitur solida pollentia simplicitate,  
 Quorum condenseo magis omnia conciliatu 575  
 Artari possunt ualidasque ostendere uiris.

(iii) Porro, si nullast frangendis reddita finis  
 Corporibus, tamen ex aeterno tempore quaeque  
 Nunc etiam superare necessest corpora rebus,  
 Quae nondum clueant ullo temptata periclo: 580  
 At quoniam fragili natura praedita constant,  
 Discrepat aeternum tempus potuisse manere,  
 Innumerabilibus plagis uexata per aeuom.

(iv) Denique, iam quoniam generatim reddita finis  
 Crescendi rebus constat uitamque tenendi, 585  
 Et quid quaeque queant per foedera naturai,  
 Quid porro nequeant, sancitum quandoquidem exstat,  
 Nec commutatur quicquam—quin omnia constant  
 Vsque adeo, uariae uolucres ut in ordine cunctae  
 Ostendant maculas generalis corpore inesse, 590  
 Immutabili' materiae quoque corpus habere  
 Debent nimirum. Nam si primordia rerum  
 Commutari aliqua possent ratione reuicta,  
 Incertum quoque iam constet, quid possit oriri,  
 Quid nequeat, finita potestas denique cuique 595  
 Quanam sit ratione atque alte terminus haerens;  
 Nec toties possint generatim saecula referre  
 Naturam, mores, uictum, motusque parentum.

- (i) Tum porro, quoniam est extremum quodque cacumen  
*Corporibus, quod iam nobis minimum esse uidetur,*  
*Debet item ratione pari minimum esse cacumen*  
 Corporis illius, quod nostri cernere sensus 600  
 Iam nequeunt. Id nimirum sine partibus exstat,  
 Et minima constat natura, nec fuit umquam  
 Per se secretum, neque posthac esse ualebit,  
 Alterius quoniamst ipsum pars primaque et una;  
 Inde aliae atque aliae similes ex ordine partes 605  
 Agmine condense naturam corporis explent;  
 Quae quoniam per se nequeunt constare, necessest  
 Haerere unde queant nulla ratione reuelli.  
 Sunt igitur solida primordia simplicitate,  
 Quae minimis stipata cohaerent partibus arte, 610  
 Non ex illarum conuentu conciliata,  
 Sed magis aeterna pollentia simplicitate,  
 Vnde neque auelli quicquam neque deminui iam  
 Concedit natura, reseruans semina rebus.
- (ii) Praeterea, nisi erit minimum, paruissima quaeque 615  
 Corpora constabunt ex partibus infinitis,  
 Quippe ubi dimidiae partis pars semper habebit  
 Dimidiam partem, nec res praefiniet ulla.  
 Ergo rerum inter summam minimamque quid escit?  
 Nil erit ut distet; nam quamuis funditus omnis 620  
 Summa sit infinita, tamen, paruissima quae sunt,  
 Ex infinitis constabunt partibus aequae.  
 Quod quoniam ratio reclamationem uera negatque  
 Credere posse animum, uictus fateare necessest  
 Esse ea, quae nullis iam praedita partibus exstant 625  
 Et minima constant natura. Quae quoniam sunt,

599 uersus qui sequuntur suppleuit Munro.

604 sic interpunxit Giussani.

Illa quoque esse tibi solida atque aeterna fatendum.

- (ii) Denique, si minimas in partis cuncta resolui  
 Cogere consuesset rerum natura creatrix,  
 Iam nil ex illis eadem reparare ualeret, 630  
 Propterea quia, quae nullis sunt partibus aucta,  
 Non possunt ea quae debet genitalis habere  
 Materies—uarios conexus, pondera, plagas,  
 Concursus, motus, per quae res quaeque geruntur.

Quapropter, qui materiem rerum esse putarunt 635  
 Ignem, atque ex igni summam consistere solo,  
 Magno opere a uera lapsi ratione uidentur.  
 Heraclitus inquit quorum dux proelia primus,  
 Clarus ob obscuram linguam magis inter inanis  
 Quamde grauis inter Graios, qui uera requirunt. 640  
 Omnia enim stolidi magis admirantur amantque,  
 Inuersis quae sub uerbis latitantia cernunt,  
 Veraque constituunt quae belle tangere possunt  
 Auris, et lepido quae sunt fucata sonore.

- Nam, cur tam uariae res possint esse requiro, 645  
 Ex uno si sunt igni puroque creatae.  
 (i) Nil prodesset enim calidum denserier ignem  
 Nec rareferi, si partes ignis eandem  
 Naturam, quam totus habet super ignis, haberent.  
 Acrior ardor enim conductis partibus esset, 650  
 Languidior porro disiectis disque sipatis.  
 Amplius hoc fieri nil est quod posse rearis  
 Talibus in causis, nedum uariantia rerum  
 Tanta queat densis rarisque ex ignibus esse.  
 Id quoque, si faciant admixtum rebus inane, 655

645 possint *Munro*, possent *OQ*.



- Denseri poterunt ignes rarique relinqui.  
 Sed quia multa sibi cernunt contraria *nasci*,  
 Ardua dum metuunt, amittunt uera uiai, [659]  
 Et fugitant in rebus inane relinquere purum; [658]  
 Nec rursum cernunt, exempto rebus inani, 660  
 Omnia denseri, fierique ex omnibus unum  
 Corpus, nil ab se quod possit mittere raptim;  
 Aestifer ignis uti lumen iacit atque uaporem,  
 Vt uideas non e stipatis partibus esse.
- (ii) Quodsi forte alia credunt ratione potesse 665  
 Ignis in coetu stingui mutareque corpus,  
 Scilicet ex nulla facere id si parte reparcent,  
 Occidet ad nilum nimirum funditus ardor  
 Omnis, et e nilo fient quaecumque creantur.  
 Nam, quodcumque suis mutatum finibus exit, 670  
 Continuo hoc mors est illius quod fuit ante.  
 Proinde aliquid superare necesse est incolume ollis,  
 Ne tibi res redeant ad nilum funditus omnes,  
 De niloque renata uigescat copia rerum.  
 Nunc igitur, quoniam certissima corpora quaedam 675  
 Sunt, quae conseruant naturam semper eandem,  
 Quorum habitu aut aditu mutatoque ordine mutant  
 Naturam res et conuertunt corpora sese,  
 Scire licet non esse haec ignea corpora rerum.  
 Nil referret enim quaedam decedere, abire, 680  
 Atque alia attribui, mutarique ordine quaedam,  
 Si tamen ardoris naturam cuncta tenerent;  
 Ignis enim foret omnimodis quodcumque crearent.  
 Verum, ut opinor, itast: sunt quaedam corpora, quorum

657 nasci *Munro*, musae *O*, Musae *Ernout*, mu *Q*.

658, 659 *transposui*.

666 coetu *Pontanus*, coetus *OQ*.

Concursus, motus, ordo, positura, figurae 685  
 Efficiunt ignis, mutatoque ordine mutant  
 Naturam, neque sunt igni simulata neque ulli  
 Praeterea rei, quae corpora mittere possit  
 Sensibus, et nostros adiectu tangere tactus.

Dicere porro ignem res omnis esse, neque ullam 690  
 Rem ueram in numero rerum constare nisi ignem,  
 Quod facit hic idem, perdelirum esse uidetur.

- (i) Nam contra sensus ab sensibus ipse repugnat,  
 Et labefactat eos, unde omnia credita pendent,  
 Unde hic cognitus est ipsi quem nominat ignem. 695  
 Credit enim sensus ignem cognoscere uere,  
 Cetera non credit, quae nilo clara minus sunt.  
 Quod mihi cum uanum, tum delirum esse uidetur.  
 Quo referemus enim? Quid nobis certius ipsis  
 Sensibus esse potest, qui uera ac falsa notemus? 700
- (ii) Praeterea, quare quisquam magis omnia tollat  
 Et uelit ardoris naturam linquere solam,  
 Quam neget esse ignis, *quiduis* tamen esse relinquat?  
 Aequa uidetur enim dementia dicere utrumque.

Quapropter, qui materiem rerum esse putarunt 705  
 Ignem, atque ex igni summam consistere posse,  
 Et qui principium gignundis aera rebus  
 Constituere, aut umorem quicumque putarunt  
 Fingere res ipsum per se, terramue creare  
 Omnia et in rerum naturas uertier omnis, 710  
 Magno opere a uero longe derrasse uidentur.

703 *quiduis* *supplevit* Lachmann.

Post 704 hunc titulum pro uersu habet O—neque ignem  
 neque aera neque umorem principia esse.

Adde etiam qui conduplicant primordia rerum,  
 Aera iungentes igni terramque liquori,  
 Et qui quattuor ex rebus posse omnia rentur  
 Ex igni, terra atque anima procreescere et imbri. 715  
 Quorum Acragantinus cum primis Empedocles est,  
 Insula quem triquetris terrarum gessit in oris,  
 Quam fluitans circum magnis anfractibus aequor  
 Ionium glaucis aspargit uirus ab undis,  
 Angustoque fretu rapidum mare diuidit undis 720  
 Italiae terrarum oras a finibus eius.  
 Hic est uasta Charybdis, et hic Aetnaea minantur  
 Murmura flammaram rursus se colligere iras,  
 Faucibus eruptos iterum uis ut uomat ignis,  
 Ad caelumque ferat flammai fulgura rursus. 725  
 Quae cum magna modis multis miranda uidetur  
 Gentibus humanis regio uisendaque fertur,  
 Rebus opima bonis, multa munita uirum ui,  
 Nil tamen hoc habuisse uiro praeclarius in se  
 Nec sanctum magis et mirum carumque uidetur. 730  
 Carmina quin etiam diuini pectoris eius  
 Vociferantur et exponunt praeclara reperta,  
 Vt uix humana uideatur stirpe creatus.

Hic tamen, et supra quos diximus, inferiores  
 Partibus egregie multis multoque minores, 735  
 Quamquam, multa bene ac diuinitus inuenientes,  
 Ex adyto tamquam cordis responsa dedere  
 Sanctius et multo certa ratione magis quam  
 Pythia, quae tripodi a Phoebi lauroque profatur,  
 Principiis tamen in rerum fecere ruinas, 740  
 Et grauius magni magno cecidere ibi casu;  
 (i) Primum, quod motus, exempto rebus inani,

- Constituunt, et res mollis rarasque relinquunt,  
 Aera, rorem, ignem, terras, animalia, fruges,  
 Nec tamen admiscent in eorum corpus inane; 745
- (ii) Deinde quod omnino finem non esse secandis  
 Corporibus faciunt neque pausam stare fragori,  
 Nec prorsum in rebus minimum consistere quicquam;  
 Cum uideamus id extremum cuiusque cacumen  
 Esse, quod ad sensus nostros minimum esse uidetur, 750  
 Conicere ut possis ex hoc, quae cernere non quis,  
 Extremum quod habent, minimum consistere *et illis*.
- (iii) Huc accedit item, quoniam primordia rerum  
 Mollia constituunt, quae nos natiua uidemus  
 Esse et mortali cum corpore funditus, utqui 755  
 Debeat ad nilum iam rerum summa reuerti  
 De niloque renata uigescere copia rerum:  
 Quorum utrumque quid a uero iam distet habebis.
- (iv) Deinde inimica modis multis sunt atque ueneno  
 Ipsa sibi inter se; quare aut congressa peribunt, 760  
 Aut ita diffugient ut, tempestate coacta,  
 Fulmina diffugere atque imbris uentosque uidemus.
- (i) Denique, quattuor ex rebus si cuncta creantur  
 Atque in eas rursus res omnia dissoluuntur,  
 Qui magis illa queunt rerum primordia dici 765  
 Quam contra res illorum, retroque putari?  
 Alternis gignuntur enim, mutantque colorem  
 Et totam inter se naturam tempore ab omni.
- (ii) Sin ita forte putas ignis terraeque coire 770  
 Corpus et aerias auras roremque liquoris,  
 Nil in concilio naturam ut mutet eorum,

744 rorem *Christ*, solem *OQ*.752 *et Postgate*, in illis *suppleuit Munro*.

Nulla tibi ex illis poterit res esse creata,  
 Non animans, non exanimo cum corpore, ut arbor.  
 Quippe suam quidque in coetu uariantis acerui 775  
 Naturam ostendet, mixtusque uidebitur aer  
 Cum terra simul atque ardor cum rore manere.  
 At primordia gignundis in rebus oportet  
 Naturam clandestinam caecamque adhibere,  
 Emincat nequid, quod contra pugnet et obstet 780  
 Quominus esse queat proprie quodcumque creatur.

Quin etiam repetunt a caelo atque ignibus eius,  
 Et primum faciunt ignem se uertere in auras  
 Aeris, hinc imbrem gigni, terramque creari  
 Ex imbri, retroque a terra cuncta reuerti— 785  
 Vmorem primum, post aera, deinde calorem;  
 Nec cessare haec inter se mutare, meare  
 A caelo ad terram, de terra ad sidera mundi.  
 Quod facere haud ullo debent primordia pacto.  
 Immutabile enim quiddam superare necessest, 790  
 Ne res ad nilum redigantur funditus omnes.  
 Nam, quodcumque suis mutatum finibus exit,  
 Continuo hoc mors est illius quod fuit ante.  
 Quapropter, quoniam quae paulo diximus ante  
 In commutatum ueniunt, constare necessest 795  
 Ex aliis ea, quae nequeant conuertier usquam,  
 Ne tibi res redeant ad nilum funditus omnes.  
 Quin potius, tali natura praedita, quaedam  
 Corpora constituas, ignem si forte crearint,  
 Posse eadem, demptis paucis paucisque tributis, 800  
 Ordine mutato et motu, facere aeris auras,  
 Sic alias aliis rebus mutarier omnis?

'At manifesta palam res indicat,' inquis 'in auras  
 Aeris e terra res omnis crescere alicue;  
 Et nisi tempestas indulget tempore fausto 805  
 Imbribus, ut tabe nimborum arbusta uacillent,  
 Solque sua pro parte fouet tribuitque calorem,  
 Crescere non possint fruges, arbusta, animantes.'  
 Scilicet; et nisi nos cibus aridus et tener umor  
 Adiuuet, amisso iam corpore, uita quoque omnis 810  
 Omnibus e neruis atque ossibus exsoluatur.  
 Adiutamur enim dubio procul atque alimur nos  
 Certis ab rebus, certis aliae atque aliae res.  
 Nimirum quia multa modis communia multis  
 Multarum rerum in rebus primordia mixta 815  
 Sunt, ideo uariis uariae res rebus aluntur.  
 Atque eadem magni refert primordia saepe  
 Cum quibus et quali positura contineantur,  
 Et quos inter se dent motus accipiantque;  
 Namque eadem caelum, mare, terras, flumina, solem 820  
 Constituunt, eadem fruges, arbusta, animantis;  
 Verum aliis alioque modo commixta mouentur.  
 Quin etiam passim nostris in uersibus ipsis  
 Multa elementa uides multis communia uerbis,  
 Cum tamen inter se uersus ac uerba necessest 825  
 Confiteare et re et sonitu distare sonanti.  
 Tantum elementa queunt, permutato ordine solo.  
 At rerum quae sunt primordia, plura adhibere  
 Possunt, unde queant uariae res quaeque creari.

Nunc et Anaxagorae scrutemur homoeomerian, 830  
 Quam Grai memorant, nec nostra dicere lingua  
 Concedit nobis patrii sermonis egestas;  
 Sed tamen ipsam rem facilest exponere uerbis.

Principio, rerum quom dicit homoeomerian,  
 Ossa uidelicet e pauxillis atque minutis 835  
 Ossibus hic, et de pauxillis atque minutis  
 Visceribus uiscus gigni, sanguenque creati  
 Sanguinis inter se multis coeuntibu' guttis,  
 Ex auri que putat micis consistere posse  
 Aurum, et de terris terram concrecere paruis, 840  
 Ignibus ex ignis, umorem umoribus esse;  
 Cetera consimili fingit ratione putatque.

(i) Nec tamen esse ulla idem ex parte in rebus inane

(ii) Concedit, neque corporibus finem esse secandis.

Quare in utraque mihi pariter ratione uidetur 845  
 Errare atque illi, supra quos diximus ante.

(iii) Adde quod imbecilla nimis primordia fingit,

Si primordia sunt, simili quae praedita constant

Natura atque ipsae res sunt, aequaeque laborant  
 Et pereunt, neque ab exitio res ulla refrenat. 850

Nam quid in oppressu ualido durabit eorum,

Vt mortem effugiat, leti sub dentibus ipsis?

Ignis an umor an aura? Quid horum? Sanguen an ossa?

Nil, ut opinor, ubi ex aequo res funditus omnis

Tam mortalis erit quam quae manifesta uidemus 855

Ex oculis nostris aliqua ui uicta perire.

At neque recidere ad nilum res posse, neque autem

Crescere de nilo testor res ante probatas.

Praeterea, quoniam cibus auget corpus alitque,

(a) Scire licet nobis uenas et sanguen et ossa 860

*Et neruos alienigenis ex partibus esse;*

*Siue cibos omnis commixto corpore dicent*

839 auraeque Bentley. 840 Auram Bentley.  
 Post 860 uersum suppleuit Lambinus.

- Esse, et habere in se neruorum corpora parua  
 Ossaque et omnino uenas partisq̄ue cruoris,  
 Fiet uti cibus omnis, et aridus et liquor, ipse  
 Ex alienigenis rebus constare putetur— 865  
 Ossibus et neruis sanieque et sanguine mixto.
- (b) Praeterea, quaecumque e terra corpora crescunt  
 Si sunt in terris, terram constare necessest  
 Ex alienigenis, quae terris exoriuntur.  
 Transfer item, totidem uerbis utare licebit. 870
- (c) In lignis si flamma latet fumusque cinisque,  
 Ex alienigenis consistant ligna necessest, 872  
 Ex alienigenis, quae lignis exoriuntur. 874

- Linq̄uitur hic quaedam latitandi copia tenuis,  
 Id quod Anaxagoras sibi sumit, ut omnibus omnis  
 Res putet inmixtas rebus latitare, sed illud  
 Apparere unum, cuius sint plurima mixta  
 Et magis in promptu primaque in fronte locata.  
 Quod tamen a uera longe ratione repulsumst. 880
- (a) Conueniebat enim, fruges quoque saepe, minaci  
 Robore cum saxi franguntur, mittere signum  
 Sanguinis aut aliquid, nostro quae corpore aluntur,  
 Cum lapidi in lapidem terimus, manare cruorem:  
 Consimili ratione herbas quoque saepe decebat 885  
 Et latices dulcis guttas similique sapore  
 Mittere, lanigeræ quali sunt ubere lactis;
- (b) Scilicet et glebis terrarum saepe friatis

864 *sic interpunxit Giussani.*

866 mixto *Lachmann*, mixta *OQ*.

873 Praeterea tellus quae corpora cumque alit auget *OQ*,  
*seclisit Giussani.*

885 herbas *Marullus*, herbis *OQ*.

887 quali *Q*, qualis *O*.



- Herbarum genera et fruges frondesque uideri  
 Dispertita inter terram latitare minute; 890
- (c) Postremo in lignis cinerem fumumque uideri,  
 Cum prae fracta forent, ignisque latere minutos.  
 Quorum nil fieri quoniam manifesta docet res,  
 Scire licet non esse in rebus res ita mixtas;  
 Verum semina multimodis inmixta latere 895  
 Multarum rerum in rebus communia debent.

‘At saepe in magnis fit montibus’ inquis ‘ut altis  
 Arboribus uicina cacumina summa terantur  
 Inter se, ualidis facere id cogentibus Austris,  
 Donec flammai fulserunt flore coorto.’ 900  
 Scilicet; et non est lignis tamen insitus ignis,  
 Verum semina sunt ardoris multa, terendo  
 Quae cum confluxere, creant incendia siluis.  
 Quod si facta foret siluis abscondita flamma,  
 Non possent ullum tempus celarier ignes, 905  
 Conficerent uolgo siluas, arbusta cremarent.  
 Iamne uides igitur, paulo quod diximus ante,  
 Permagni referre, eadem primordia saepe  
 Cum quibus et quali positura contineantur,  
 Et quos inter se dent motus accipiantque, 910  
 Atque eadem, paulo inter se mutata, creare  
 Ignis et lignum? Quo pacto uerba quoque ipsa  
 Inter se paulo mutatis sunt elementis,  
 Cum ligna atque ignis distincta uoce notemus.  
 Denique iam, quaecumque in rebus cernis apertis 915  
 Si fieri non posse putas, quin materiali  
 Corpora consimili natura praedita fingas,  
 Hac ratione tibi pereunt primordia rerum:  
 Fiet uti risu tremulo concussa cachinnent,

Et lacrimis salsis umectent ora genasque. 920

Nunc age, quod superest cognosce et clarius audi!  
 Nec me animi fallit quam sint obscura; sed acri  
 Percussit thyrso laudis spes magna meum cor,  
 Et simul incussit suauem mi in pectus amorem  
 Musarum, quo nunc instinctus mente uigenti 925  
 Auia Pieridum peragro loca, nullius ante  
 Trita solo. Iuuat integros accedere fontis  
 Atque haurire, iuuatque nouos decerpere flores,  
 Insignemque meo capiti petere inde coronam,  
 Unde prius nulli uelarint tempora Musae: 930  
 Primum, quod magnis doceo de rebus, et artis  
 Religionum animum nodis exsolvere pergo;  
 Deinde, quod obscura de re tam lucida pango  
 Carmina, musaeo contingens cuncta lepore.  
 Id quoque enim non ab nulla ratione uidetur; 935  
 Sed, ueluti pueris absinthia taetra medentes  
 Cum dare conantur, prius oras pocula circum  
 Contingunt mellis dulci flauoque liquore,  
 Vt puerorum aetas improuida ludificetur  
 Labrorum tenus, interea perpotet amarum 940  
 Absinthii laticem deceptaque non capiatur,  
 Sed potius tali pacto recreata ualescat,  
 Sic ego nunc, quoniam haec ratio plerumque uidetur  
 Tristior esse quibus non est tractata, retroque  
 Volgus abhorret ab hac, uolui tibi suauiloquenti 945  
 Carmine Pierio rationem exponere nostram,  
 Et quasi musaeo dulci contingere melle,  
 Si tibi forte animum tali ratione tenere  
 Versibus in nostris possem, dum perspicis omnem  
 Naturam rerum, qua constet compta figura. 950

Sed quoniam docui solidissima materiai  
 Corpora perpetuo uolitare inuicta per aeuom,  
 Nunc age, summai quaedam sit finis eorum  
 Necne sit euoluamus; item quod inane repertumst  
 (Seu locus ac spatium, res in quo quaeque gerantur) 955  
 Peruideamus utrum finitum funditus omne  
 Constet, an immensum pateat uasteque profundum.

- Omne quod est igitur nulla regione uiarum
- (i) Finitumst; namque extremum debebat habere:  
 Extremum porro nullius posse uidetur 960  
 Esse, nisi ultra sit quod finiat; ut uideatur,  
 Quo non longius haec sensus natura sequatur.  
 Nunc extra summam quoniam nil esse fatendum,  
 Non habet extremum, caret ergo fine modoque.  
 Nec refert, quibus adsistas regionibus eius; 965  
 Vsque adeo, quem quisque locum possedit, in omnis  
 Tantundem partis infinitum omne relinquit.
- (ii) Praeterea, si iam finitum constituatur  
 Omne quod est spatium, siquis procurrat ad oras  
 Vltimus extremas iaciatque uolatile telum, 970  
 Id ualidis utrum contortum uiribus ire  
 Quo fuerit missum mauis longeque uolare,  
 An prohibere aliquid censes obstareque posse?  
 Alterutrum fatearis enim sumasque necessesit.  
 Quorum utrumque tibi effugium praeccludit, et omne 975  
 Cogit ut exempta concedas fine patere.  
 Nam, siue est aliquid quod probeat officiatque  
 Quominu' quo missum est ueniat finique locet se,  
 Siue foras fertur, non est a fine profectum.  
 Hoc pacto sequar atque, oras ubicumque locaris 980  
 Extremas, quaeram quid telo denique fiat.

- Fiet uti nusquam possit consistere finis,  
 Effugiumque fugae prolatet copia semper.
- (iii) Practerea, spatium summai totius omne  
 Vndique si inclusum certis consisteret oris 985  
 Finitumque foret, iam copia material  
 Vndique ponderibus solidis confluet ad imum,  
 Nec res ulla geri sub caeli tegmine posset,  
 Nec foret omnino caelum neque lumina solis,  
 Quippe ubi materies omnis cumulata iaceret, 990  
 Ex infinito iam tempore subsidendo.  
 At nunc nimirum requies data principiorum  
 Corporibus nullast, quia nil est funditus imum,  
 Quo quasi confluere et sedes ubi ponere possint.  
 Semper in adsiduo motu res quaeque geruntur 995  
 Partibus e cunctis, infernaque suppeditantur  
 Ex infinito cita corpora material.  
 Est igitur natura loci spatiumque profundi,  
 Quod neque clara suo percurrere fulmina cursu  
 Perpetuo possint aeui labentia tractu, 1000  
 Nec prorsum facere ut restet minus ire meando:  
 Vsque adeo passim patet ingens copia rebus,  
 Finibus exemptis in cunctas undique partis.
- (iv) Postremo, ante oculos res rem finire uidetur: [998]  
 Aer dissaepit collis atque aera montes; 1005 [999]  
 Terra mare et contra mare terras terminat omnis; [1000]  
 Omne quidem uero nil est quod finiat extra. [1001]  
 Ipsa modum porro sibi rerum summa parare  
 Ne possit, natura tenet, quae corpus inani  
 Et quod inane autem est finiri corpore cogit, 1010  
 Vt sic alternis infinita omnia reddat,  
 Aut etiam alterutrum, nisi terminet alterum eorum,

1004-1007 *hic posuit Giussani, post 997 habent codices,*  
*post 983 posuit Munro.*

Simplice natura pateat tamen immoderatum.

\* \* \* \*

Nec mare nec tellus neque caeli lucida templa  
 Nec mortale genus nec diuum corpora sancta 1015  
 Exiguum possent horai sistere tempus.  
 Nam, dispulsa suo de coetu, materiai  
 Copia ferretur magnum per inane soluta,  
 Siue adeo potius numquam concreta creasset  
 Vllam rem, quoniam cogi disiecta nequisset. 1020  
 Nam certe neque consilio primordia rerum  
 Ordine se suo quaeque sagaci mente locarunt,  
 Nec quos quaeque darent motus pepigere profecto;  
 Sed, quia multa modis multis mutata per omne  
 Ex infinito uexantur percita plagis, 1025  
 Omne genus motus et coetus experiundo  
 Tandem deueniunt in talis disposituras,  
 Qualibus haec rerum consistit summa creata;  
 Et multos etiam magnos seruata per annos,  
 Vt semel in motus coniectast conuenientis, 1030  
 Efficit ut largis auidum mare fluminis undis  
 Integrent amnes, et solis terra uapore  
 Fota nouet fetus, summissaque gens animantum  
 Floreat, et uiuant labentes aetheris ignes.  
 Quod nullo facerent pacto, nisi materiai 1035  
 Ex infinito suboriri copia posset,  
 Vnde amissa solent reparare in tempore quaeque.  
 Nam ueluti priuata cibo natura animantum  
 Diffluit, amittens corpus, sic omnia debent  
 Dissolui, simul ac defecit suppeditare 1040  
 Materies, aliqua ratione auersa uiai.  
 Nec plagae possunt extrinsecus undique summam

*Post 1013 lacunam esse probauit Madvig.*

Conseruare omnem, quaecumque est conciliata:  
 Cudere enim crebro possunt partemque morari,  
 Dum ueniant aliae ac suppleri summa queatur; 1045  
 Interdum resilire tamen coguntur, et una  
 Principiis rerum spatium tempusque fugai  
 Largiri, ut possint a coetu libera ferri;  
 Quare, etiam atque etiam, suboriri multa necessest.  
 Et tamen, ut plagae quoque possint suppetere ipsae, 1050  
 Infinita opus est uis undique materiai.

Illud in his rebus longe fuge credere, Memmi,  
 In medium summae, quod dicunt, omnia niti,  
 Atque ideo mundi naturam stare sine ullis  
 Ictibus externis, neque quoquam posse resolui 1055  
 Summa atque ima, quod in medium sint omnia nixa;  
 (Ipsam si quicquam posse in se sistere credis!)  
 Et quae pondera sunt sub terris, omnia sursum  
 Nitier, in terraque retro requiescere posta,  
 Vt per aquas quae nunc rerum simulacra uidemus. 1060  
 Et simili ratione animalia suppa uagari  
 Contendunt, neque posse e terris in loca caeli  
 Reccidere inferiora, magis quam corpora nostra  
 Sponte sua possint in caeli templa uolare;  
 Illi cum uideant solem, nos sidera noctis 1065  
 Cernere, et alternis nobiscum tempora caeli  
 Diuidere, et noctes parilis agitare diebus.  
 Sed uanus stolidis haec *error somnia finxit,*  
 Amplexi quod habent *peruersa rem ratione.*  
 Nam medium nil esse potest, *ubi summa profundist* 1070  
 Infinita; neque omnino, si iam *medium sit,*  
 Possit ibi quicquam consistere *eam magis ob rem*  
 Quam quauis alia longe ratione *repelli.*

Omnis enim locus ac spatium, quod inane uocamus,  
 Per medium, per non medium, concedere debet 1075  
 Aequae ponderibus, motus quacumque feruntur.  
 Nec quisquam locus est, quo corpora cum uenerunt,  
 Ponderis amissa ui possint stare in inani;  
 Nec quod inane autem est ulli subsistere debet,  
 Quin, sua quod natura petit, concedere pergat. 1080  
 Haud igitur possunt tali ratione teneri  
 Res in concilio, medii cuppedine uictae.

Praeterea, quoniam non omnia corpora fingunt  
 In medium niti, sed terrarum atque liquoris,  
 Vmorem ponti magnasque e montibus undas, 1085 [1086]  
 Et quasi terreno quae corpore contineantur, [1085]  
 At contra tenuis exponunt aeris auras  
 Et calidos simul a medio differri ignis,  
 Atque ideo totum circum tremere aethera signis  
 Et solis flammam per caeli caerulea pasci, 1090  
 Quod calor a medio fugiens se ibi colligat omnis;  
 Nec prorsum arboribus summos frondescere ramos  
 Posse, nisi a terris paulatim cuique cibatum

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1068–1075 *hos uersus omittit Q, mutilos habet O, expleuit Munro.*

1085, 1086 *transposuit Giussani.*

1093–1102 *spatium octo uersuum inane relinquit O.*

Ne uolucris ritu flammaram moenia mundi 1102  
 Diffugiant subito magnum per inane soluta,  
 Et ne cetera consimili ratione sequantur,  
 Neue ruant caeli tonitralia templa superne, 1105  
 Terraque se pedibus raptim subducatur, et omnis,  
 Inter permixtas rerum caelique ruinas  
 Corpora soluentes, abeat per inane profundum,  
 Temporis ut puncto nil extet reliquiarum  
 Desertum praeter spatium et primordia caeca. 1110  
 Nam quacumque prius de parti corpora desse  
 Constitues, haec rebus erit pars ianua leti,  
 Hac se turba foras dabit omnis materiai.

Haec si pernosces, parua perductus opella  
*Cetera iam poteris per te tute ipse uidere.*  
 Namque alid ex alio clarescet, nec tibi caeca 1115  
 Nox iter eripiet, quin ultima naturai  
 Peruideas: ita res accendent lumina rebus.

1105 tonitralia *Lambinus*, tonetralia *OQ*. 1114 si *Munro*,  
 sic *OQ*. Post 1114 uersum suppleuit *Munro*.



## NOTES

**1-148.** (i) Lucretius died, leaving his poem unfinished. The view, held by Lachmann and Munro, that the earlier books were left in a completed state, is no longer tenable: they also contain, as will be shown in the case of Book i, many marks of imperfection: see too p. xvi. It is therefore not surprising that what may be called the preface (ll. 1-148) is in an unsatisfactory condition, so far as the arrangement of paragraphs is concerned; for it is probable that the writer would settle his preface last. Proof of this will be given below: see esp. notes at ll. 50 and 146. Some rearrangement of these paragraphs has been suggested. Giussani, for instance, adopts this order: 1-43; 62-79; lacuna; 136-145; 50-61; 80-135. This seems to me a more logical order than that given in the MSS. But it is unsafe to interfere with the text; for we run the risk of correcting not the scribes who copied the poem but the author himself.

(ii) All the six books of the *De Rerum Natura* contain some introductory matter, generally consisting of two parts: (1) a panegyric on Epicurus; (2) a statement of the matters to be treated of. In this respect Book i is like the others; but also, as being the introduction to the whole poem, it begins with two topics which are not repeated in any later book: (1) an invocation, to Venus; (2) a dedication, to Memmius.

The invocation to Venus did not pass uncriticised even in ancient times, as we shall see (n. to l. 44). Epicurus taught that the gods take no interest in human affairs. Hence Lucretius, as a follower of Epicurus, is inconsistent with his own principles, when he asks Venus to aid him in the writing of his poem. Had he been content to identify Venus with *uoluptas*, and to use her name in order to personify the principle of life in the universe, it might pass; but he goes far beyond this. When he feigns to believe (ll. 32 foll.) that Venus and Mars are lovers, he gives his sanction to one of the most scandalous stories of the gods. There is only one way of accounting for this remarkable inconsistency. To the ancients—and not to them only, as Milton's *Lycidas* will prove—mythology was the very stuff of poetry; and Lucretius, though strict elsewhere, was unwilling, at

the outset of his poem, in what Tennyson calls his 'rich proëmion,' to sacrifice the poetical advantage which he could draw from mythological description.

1-43. *O Venus, source of life, harbinger of spring, mistress of the universe, aid me in the writing of this poem for Memmius. Plead with thy lover, Mars, that peace may prevail over the world; in time of war, I cannot write, and Memmius cannot hear, with a mind at ease.*

1. **Aeneadum genetrix**: Lucr. strikes a national note: Venus, mother of Aeneas, is also mother of his descendants, the Roman people.

Just as the Aeneid is often referred to by Latin poets as *Arma uirumque*, and Book i of Propertius as *Cynthia*, so the poem of Lucr. is referred to by Ovid *Trist.* ii 261 *sumpserit, Aeneadum genetrix ubi prima* (if she takes up the work, where *Aeneadum genetrix* comes first).

*genetrix* is the true spelling in spite of *genitor*: so *meritus* but *meretrix*.

**uoluptas** = ἡδονή. It is characteristic of Lucr. to put this word in his first line. The chief grounds on which Epicurus was attacked were these: (1) his adoption of pleasure (ἡδονή) as the chief good; (2) his denial of Providence. So the Stoic Hierocles (*ap. Aul. Gell.* ix 5) ἡδονή τέλος, πόρνης δόγμα· οὐκ ἔστιν πρόνοια, οὐδὲ πόρνης δόγμα (too bad even for a harlot). Far from concealing this unpopular dogma, Lucr. gives it the utmost prominence: indeed, it is possible that his determination to bring in ἡδονή suggested the whole of this invocation.

2. **alma**, 'nurturing,' connected with *alere*: applied also to *nutrix* (v 230), water (ii 390), Pallas (vi 750).

**caeli**, followed by *mare* and *terras*: the three great divisions of our world, repeated ll. 7-9 and often throughout the poem.

**signa**, 'stars,' whose silent steady motion is often described by the verb *labi*: e.g. l. 1034.

3. **nauigerum, frugiferentis**: Lucr. is the last of the Latin poets to use, and to invent, compound words of this type. Virgil clearly felt that they were unsuited to the language, and Quintilian agrees with him, saying that such words, admirable in Greek, are often ludicrous in Latin: i 5, 70 *res tota magis Graecos decet; ...ideoque*

*cum κροτάβηνα mirati sumus*, 'incuruicercuicum' uix a risu defendimus. This limitation has descended to the Romance languages: how inferior French is to German in the power of forming compound words!

**terras frugiferentis**: the rhythm is notable. Virgil would write *terras quae fr.*, and later poets followed him in this matter. But Lucr. prefers that the fourth foot should be a spondee and should end with the end of a word: of the first ten lines seven are on this model. In consequence of this practice, his hexameter lacks variety, compared with Virgil's, but gains a force and stability of its own.

4. **concelebras**, 'fillest with thy presence': cf. ii 344 *uolucres... quae loca...concelebrant*: the verb has generally a plur. subject but is properly used of Venus, because she is omnipresent.

**quoniam**: the argument is this: Venus must be everywhere, because she creates everything.

**animantum**: Lucr. uses *animantes* as a noun (fem.) equivalent to *animalia*: the sing. *animal* he uses only once (v 823).

5. **exortum**: i.e. from the womb of the mother.

**lumina**: poetical for *lumen*: so, esp. in Ovid, *corpora* for *corpus*, *nomina* for *nomen* etc.

6 foll. Spring is identified with the coming of Venus, because animals mate at that season. So, in a pageant of the seasons, Spring and Venus go together: v 737 *it uer et Venus, et Veneris praenuntius ante | pennatus* (winged Cupid) *graditur*.

The winds and clouds of winter flee at her approach.

**fugiunt** is the main verb: all that precedes is apostrophe.

7. **daedala**, 'manifold in works': this borrowed word (it is the Greek *δαίδαλος*) is sometimes active in Lucr., sometimes passive: it is active here and iv 551 *uerborum daedala lingua* (the tongue, the deft shaper of words), but passive v 1451 *daedala signa* (cunningly wrought statues).

8. **submittit**, *ἀντῆσι*, 'sends up from beneath.'

**aequora ponti**, 'the levels of the sea': spring has made it smooth and calm.

10. **nam**: the proof of the connexion between Venus and Spring follows: it is proved by the love-songs of the birds and the mating of all animals.

**species uerna diei** = the face of spring: *uerna* is the emphatic word: *diei* has nearly the sense of *temporis* or *anni*.

11. **reserata uiget**, 'is unbarred and blowing free': in winter it was locked up in prison by Aeolus: if we admit the existence of Venus, we can make no difficulty over Aeolus.

**genitabilis aura Fauoni**, 'the birth-favouring breath of the west wind.' Adjectives in *-bilis* are more often passive; but cf. l. 535 *manabile frigus*; Virg. *Aen.* x 481 *penetrabile telum*.

*genitabilis* is probably nom.: cf. Catull. 64, 282 *aura...fecunda Fauoni*.

*Fauonius* is the Latin name of ζέφυρος: it was expected to begin blowing in Italy on Feb. 8 (Pliny *Nat. Hist.* xvi 93).

13. **significant**: by beginning to sing.

**initum** = εἰσόδον, 'entering in': see n. to l. 383.

14. **inde**, 'next.'

**ferae**, 'maddened' by Venus: in Lucr. generally *pecudes* are the tame animals, opposed to *saecla ferarum*.

Some read here *ferae, pecudes*, 'the wild beasts and the tame'; but wild beasts have nothing to do with *pabula laeta*.

**laeta**, 'rich': a stock epithet of crops and pastures: it was not confined to poetry but was used even by country people in this sense.

15. **ita**, lit. 'in such wise': 'for' is a simpler English equivalent.

16. **sequitur**: the subject, *quacque*, is placed as object in the relative clause which follows: a constant idiom in Lucr., e.g. ll. 170, 289, 361.

17. **denique**, 'in short': cf. l. 76: but in Lucr. *denique* generally = *praeterea*, and serves to introduce a new argument: cf. l. 238.

19. **blandum amorem**, 'the spell of love.'

20. **saecla** is used by Lucr. to supply the plur. of *genus*, of which most cases are inconvenient or impossible in his metre: thrice only (i 202, iii 948 and 1090) it means 'generations' and denotes a period of time.

21. **quoniam** etc.: the argument is: 'Since you are the mistress of Nature and the source of all Beauty, make beautiful my poem on Nature, so as to be worthy of your votary, Memmius.'

**rerum naturam** here means 'the visible universe.'

22. **dias**: the adj. is used thrice by Lucr. with three different meanings: 'bright' here; ii 172 *dia* (= *diuina*) *uoluptas*; v 1387 *otia dia* (rest beneath the open sky): cf. *sub diuo*.

**luminis oras**, 'realm of light,' i.e. this world, the antenatal state being one of darkness.

*oras*, lit. 'borders'; but Lucr., and other writers, use it often to denote the space contained between the borders.

23. **laetum**: cf. l. 14: the epithet suits animals as well as vegetables and may be applied metaphorically to a poem.

24. **scribendis uersibus**: dat. of work contemplated.

**esse**, having no emphasis, would not be tolerated at the end of the verse by the Augustan poets: it is their regular practice to pack away the words that matter least in the middle of the verse. But Lucr. often has *esse, sunt* etc. in emphatic positions.

25. **de rerum natura**, 'concerning the nature of things': here the phrase = natural science. *Περὶ Φύσεως* was the title of many philosophical works written in the sixth and fifth centuries B.C. By *φύσις* those early enquirers meant 'the primary substance,' later called *ἀρχή*; but a different meaning appears in the title of the poem of Empedocles (b. 500 B.C.), the treatise of Epicurus, and this poem of Lucretius. Lucr. means by it one of the three divisions of philosophy, 'Physics' or natural science, the other two being Ethics and Logic. This is the subject of his poem; his ethical discussions are only incidental; and to Logic he, like his master, paid little attention.

**pangere**, 'to pen': used first by Ennius of poetical composition, and later even in prose: cf. Cic. *ad Fam.* xvi 18, 3 *an pangis aliquid Sophocleum?*; Tac. *Ann.* xiv 16 *pangendi facultas* (skill in writing verse). It is used of writing prose as well as verse.

26. **Memmiadae nostro**, 'for our son of the Memmii': the patronymic is invented to serve for *Memmio* which the metre will not admit: so Lucr. admits Scipio into his poem under the name of *Scipiadas* (iii 1034): in each case the patronymic has a more imposing sound, but the poet has made a virtue of necessity. The vocative, *Memmi*, which offers no metrical difficulty, he uses often.

Gaius Memmius was a Roman noble and an active politician. As praetor in 58 B.C. he tried to annul the democratic laws passed by Caesar as consul in the previous year (Suet. *Iul.* 20); in 57 he

governed Bithynia as propraetor, and one of his staff was Catullus, so that he was connected with both the great poets of his time. Catullus speaks of him with dislike (10 and 28); Cicero records that he was skilled in Greek literature but contemptuous of Latin (*Brutus* 247). His political career was not creditable or consistent. Why Lucr. dedicated the poem to him, we do not know: with no reference to this case, L. Stephen (*Hours in a Library* ii 146) speaks of 'that kind of delusion which often leads a mere literary observer to see a lofty intention in the schemes of a selfish politician.'

**tu, dea:** Venus appears on coins of the Memmii; they seem to have taken her for their patron goddess.

28. **quo magis:** the favour of Venus for Memmius is an additional reason why she should add grace and charm to the poem and make it immortal.

**da dictis:** Virgil would prefer *dictis da:* the first l. of the Aeneid ends with *Troiae qui primus ab oris*, not *qui Troiae* cet.: see n. to l. 3.

29. **moenera militiai:** 'works of war' preserves the alliteration. This gen. in *-ai* is very common in Lucr.: see p. xxiii: for a dat. in *ai*, see n. to l. 453.

30. **omnis** belongs to *maria* as much as to *terras*.

31. **tranquilla pace**, 'with peace and quiet.'

33 foll. In the power of vivid description no poet has ever surpassed Lucr.: one might suppose he was here following a picture or marble group, but he needed nothing of the kind to stir his imagination. The passage is imitated by Byron, *Childe Harold* iv 51.

35. **ita**, 'so,' in the way described, lying on the lap of Venus.

**suspiciens**, 'looking up,' into the face of the goddess: cf. ii 1039 *susplicere in caeli...lucida templa*.

**tereti**, 'shapely': an epithet of an object that is both long and round.

**reposta = reposita:** this contraction is common, but *postus* for *positus* is found only in Lucr.: cf. Ovid *Fast.* ii 63 (to Augustus) *templorum positor, templorum sancte repostor*.

36. **pascit...uisus**, ἐστία τοὺς ὀφθαλμοὺς, 'feasts his eyes.'

**amore** is best taken with *avidos*:

**inhians**, 'with open mouth': Munro quotes *Esdras* i 4, 31 'The king gaped and gazed upon her with open mouth.'

37. **resupini spiritus**, 'his breath, as he lies back': *eius* has to be supplied.

38. **corpore**: abl. of instrument, with *circumfusa*.

39. **circumfusa**, lit. 'shedding thyself round him,' i.e. placing thine arms about him: *hunc* is governed by *circum*: this verb often describes an embrace, even in prose: cf. Sen. *Dial.* xii 18, 4 *nihil tam recens in cuiusquam pectore furit, quod non circumfusus ille permulceat* (*ille* is probably the poet Lucan as a child).

**super**, 'from above.'

**loquellas**: the double *l* seems the correct spelling, when the preceding syllable is short: so *quærella* but *tûtela*.

40. **Romanis**: they are her children: cf. l. 1.

**incluta**, 'glorious lady': like *κλυτός*, this adj. is applied both to gods and men: Lucr. applies it to Epicurus, in his eyes a divine being (iii 10), and to Memmius (v 8).

41-43. The national note, rare in Lucr., is struck again here. There can be little doubt that he refers to the prospect of civil war. He died, still working at his poem, in 55 B.C., when Caesar was fighting in Gaul and Britain; and acute observers must have known that a struggle was inevitable between the conqueror of Gaul and the Senate whom he had flouted and outraged in his consulship.

41. **nos**, 'I,' not 'we': only two persons are in question, Lucr. who writes the poem, and Memmius who is to read it.

**agere hoc**, 'to give my mind to this,' i.e. the writing of my poem: cf. iv 969 (my dreams are always coloured by my work) *nos agere hoc autem et naturam quaerere rerum | semper* (sc. *uidemur*). 'To be inattentive' is *aliud agere*, often used by the old commentators of their predecessors.

**tempore iniquo**: such as an invasion of Italy by Caesar's veterans.

**iniquo**, 'cruel,' not 'unjust': this sense is common both in prose and poetry.

42. **aequo** refers back to *iniquo*: Lucr. is excessively fond of this kind of play on words: cf. l. 98 *casta inceste*; ll. 337, 877.

**Memmi** represents *Memmiorum* which the metre will not admit.

43. **communi saluti** means the cause of constitutional government. Memmius was at one time a keen partisan on the side of the Senate: cf. Cic. *ad Q. fr.* i 2, 16 (the date is Nov. 59 B.C.) *praetores habemus*

*amicissimos, et acerrimos ciues, Domitium, Nigidium, Memmium.* By *acerrimus ciuis* Cic. means exactly what Lucr. means by this verse.

44-49 of the MSS. are omitted in the text. The lines are a quotation from ii 646-651, where Lucr. translates the second of the *κύρια δόξαι* (Articles of Belief) of Epicurus, to the effect that the gods have no dealings with men. In order to confute Lucr. out of his own mouth, some ancient reader wrote these lines on his margin; from the margin they crept into the text of the original of all our MSS.

It seems that the intruding verses ousted some others written by Lucr. for this place. For in l. 43 he is addressing Venus; in l. 50 he is addressing Memmius, and no indication of the change is given.

50-61. *Listen with attention to me, while I set forth the true philosophy. I have two subjects to explain: (1) heaven and the gods; (2) the atoms out of which all things are made. (For these atoms I shall use a variety of names.)*

This paragraph is ill-placed. It is the regular custom of Lucr. to place his praise of Epicurus before the statement of his subject-matter; and it seems especially unlikely in the first Book that he should launch out into technicalities before making the general attack on superstition which follows (62-101).

50. **quod superest**=next: a common formula of transition in Lucr., but not appropriate here unless some lines have been lost: the phrase often begins an apodosis.

**animus sagacem**, 'a keen intellect': a metaphor from the power of scent in dogs: cf. l. 402. Milton writes 'sagacious of his quarry'; but in modern English 'sagacious' has lost this meaning and suits an elephant better than a dog.

51. **ueram ad rationem**, 'to the true system' of philosophy, i.e. that of Epicurus. *ratio*, very common in Lucr., is used by him with many meanings: for this meaning, cf. l. 943, and iii 14 (to Epicurus) *ratio tua*.

52. **disposta**: for the dropping out of *i*; see n. to l. 35.

53. **sint**, having no emphasis, would not be placed at the end of the clause by an Augustan poet.

**contempta relinquo**, 'you despise and leave untouched': the



participle is best translated by a verb. Lucr. seems to compare his poem to a feast which he has spread for Memmius: cf. iii 12 *depascimur aurea dicta*.

54. **summa...deumque**, 'the high lore of heaven and of the gods,' i.e. the theory of the heavenly bodies (*τὰ μετέωρα*: cf. l. 127) and of the gods: these are combined, because common belief supposes the gods to inhabit the sky. Books v and vi deal with these matters among others.

This order of topics shows that the main object of Lucr. is humanitarian, not scientific. He traced human suffering to false beliefs about the gods and a future life; and science is important only because it upsets these beliefs. In this, of course, he follows Epicurus.

55. **incipiam**, 'I shall endeavour.'

**rerum primordia pandam**: the second topic is the Atomic Theory explained in Books i and ii, which shows that divine interposition is not necessary, in order to explain the constitution of the universe.

**primordia**, 'atoms': Lucr. does not use the terms *atomi* or *individa corpora*, which are found in other writers: for a single atom, he uses *corpus* (l. 600). Further, as *primordiorum* and *primordiis* are excluded by the metre, he regularly uses *principiorum*, *principiis*, as gen., dat., and abl. of *primordia*.

**pandam**, 'I shall explain.'

56. **unde** = *ex quibus*, 'out of which.'

**natura**: personified, as constantly throughout the poem.

**omnis res**, 'all created things': the distinction between *res* (called *res genitae* l. 511) and *primordia* is fundamental: all *res* are composite, being formed of a union of atoms; each atom is one and indivisible.

57. **quoue** = *et in quae*, 'and into which': here and often in Lucr. *-ue* has the sense of *-que*, the topic being additional, not alternative. In early Latin generally, the distinction between *-ue* and *-que* is not as marked as that between *or* and *and*.

**eadem**: fem. sing. agreeing with *natura*. Thus an ambiguity arises (there are many such in Lucr.), because *eadem* might be the object of *resoluat* and agree with *perempta*; but the sense shows it to be fem. sing.

**perempta**: in prose Lucr. would have written *peremptas* and so avoided the ambiguity: for the sake of metre, he now continues as if he had written *omnia* in l. 56 and not *omnis res*.

58-61 is a mere note, in which Lucr. tells the reader that he must recognise 'atoms' under the disguise of different names which they will bear in the course of the poem. This variety of names is mainly due to the requirements of metre.

How should these aliases be translated? Munro has a different equivalent for each: e.g. 'matter' for *materies*. In order to keep the argument clear, it is perhaps better to translate *materies* etc. by 'atoms,' wherever this is the actual meaning: cf. ll. 171, 245.

58. **nos**, 'I': he refers solely to his own practice.

**materiem**, ἔλην, 'matter': (of course 'atoms' is inadmissible here).

**genitalia corpora rebus**, 'bodies (i.e. material particles) which produce created things': the phrase = *corpora quae genitalia rebus sunt*. But the dat. is odd; and it is hard to see why Lucr. did not write *rerum* instead.

59. **reddunda in ratione**, 'in philosophical discussion': a technical term in Lucr.: cf. ii 987 *doctis rationem reddere dictis*.

**uocare, appellare, usurpare**: Lucr. seems to imply that he can find at need synonyms for other things as well as atoms: for another series of synonyms, cf. l. 298 foll. There is a well-marked vein of humour in the poem.

**semina**, σπέρματα, 'seeds.'

60. **usurpare**, 'to term': lit. 'to handle,' *uoce* being understood: cf. *usurpare oculis* (l. 301): cf. Cic. *Off.* ii 40 *Laelius qui Sapiens usurpatur*.

61. **corpora prima**, 'first bodies,' i.e. primary particles of matter. **sunt**, 'are formed.'

**omnia** = *res omnes*, 'all created things.'

**primis**, 'as primary particles.'

Five names for atoms have now been given: there is a sixth, often used though not mentioned here, *elementa* = στοιχεῖα; and a seventh, *corpuscula*.

62-79. *When mankind lay crushed beneath the weight of Superstition, a man of Greece stood up to defy her and relieve them. By the power of genius he discovered what goes on in the Universe, outside our*

world. From him we have learnt the laws of nature and the division set between the possible and the impossible. Hence we in our turn triumph over and stamp on superstition.

62. **antē oculos**, 'clear to see.'

63. **grauī sub religione**, 'beneath the weight of superstition.' Epicurus taught that gods exist, but that all attempts of man to win their favour or avert their wrath are vain and therefore superstitious.

The first syll. of *religio* is naturally short: *Lucr.* lengthens it, as he does the first syll. of *reliquiae* and some other words, to make them possible in his metre.

64. **caput**: she is like the Gorgon, Medusa: to look on her head is fatal to men.

**caeli regionibus**: because the gods are popularly supposed to live there.

65. **super** and **instans** form a single participle, 'lowering overhead' upon men; and the words are intended to suggest the noun *superstitio*. This kind of play on words is found elsewhere in *Lucr.*: cf. l. 932, where *religionum nodis* is lit. 'the knots of tying,' an equivalent for 'the fetters of superstition.' The practice of Aeschylus shows that a pun was not necessarily ludicrous to the ancient mind; nor indeed was it so to some of the moderns: thus Milton says of the *ravens* which fed Elijah: 'though *ravening*, taught to abstain from what they brought,' but does not intend to amuse the reader.

66. **Graius homo**: i.e. Epicurus, a citizen of Athens. It is remarkable that *Lucr.*, though repeatedly declaring the debt of mankind to Epicurus, never mentions his name but once (iii 1042), where he appears as the last and greatest of a list of great men, so that mere allusion is impossible. There is only one explanation of this silence: that the name was too sacred to be written except in case of necessity. This feeling seems personal to *Lucr.*: of Epicureans in general we are told that they kept pictures of their master in their houses and wore his likeness in rings: in fact, they showed regard and affection for his memory, but not this religious awe.

In giving priority to Epicurus as a scientific discoverer (l. 71), *Lucr.* is unjust to Democritus (b. 460 B.C.), one of the greatest names in the history of scientific enquiry; the Atomic Theory was taken over from him, with slight modification, by Epicurus. But *Lucr.* is

thinking of the ethical theory based by Epicurus upon scientific grounds.

**contra**, 'in opposition' to her.

68. **fama deum**, 'the story of the gods,' i.e. the tales told of them.

**fulmina**: the weapon used by the supreme god to punish sinners.

This paragraph is especially full of alliteration, with repetition of *f. m, c, p,* and *u.* Nor is there a finer paragraph in the poem.

69. **compressit**, 'could repress.'

70. **inritat** is a contracted form of *inritauit*: both syntax and metre show that the pres. is impossible here: cf. vi 587 *disturbāt* (= *disturbauit*) *urbes*; in v 396 *superāt* (= *superauit*) has been introduced by conjecture.

**effringere** cet.: Nature's laws are compared to a fortress which the great conqueror had to take by storm.

71. **primus** is better taken with *effringere* than with *cupiret*. The last word is an archaic form of *cuperet*: Lucr. has other similar forms, e.g. *moriri* for *mori*.

73. **flammantia moenia mundi**, 'the fiery walls of the world,' i.e. the *aether* which forms the limit of our world, and in which the burning stars are placed.

74. **omne immensum**, 'the boundless universe.' The peculiar cosmogony of Epicurus must be borne in mind, here and elsewhere in the poem. The universe (*τὸ πᾶν*, *omne*) is infinite and contains an infinite number of worlds (*κόσμοι*, *mundi*), which may be like or unlike our world. Between worlds there are spaces (*μετακόσμια*, *intermundia*) in which the gods live. Lucr. says that Epicurus was enabled by his genius to pass the limits of our world; in thought he passed out, through the *intermundia*, into the universe at large. There he first mastered the secrets which Nature hitherto had jealously hidden from man.

This conception is confusing to us, because we consider the stars as other worlds, while Epicurus believed them to be small appendages to our world.

**peragrauit**: the besieger of l. 70 has now become an explorer and pioneer.

**mente animoque**=by the power of thought. Lucr. often uses the two nouns as synonyms. Cf. Cic. *De Fin.* ii 102 *haec non erant eius* (i.e. Epicurus), *qui innumerabiles mundos infinitasque regiones*

*mente peragrauisset*, where Madvig says that Cicero had in mind either this passage of Lucr. or some Greek text which both the Latin writers followed. We know that Cicero had read Lucr. in 54 B.C., and the *De Finibus* was written in 45. Cf. also Wordsworth (of Newton's statue in Trinity College chapel) 'the marble index of a mind for ever | voyaging through strange seas of Thought, alone.'

75. *unde*, 'from there,' i.e. from the universe.

*refert nobis*, 'he comes back and tells us.'

*quid possit oriri...terminus haerens*: repeated l. 594 foll. and, with slight change, v 88 foll.: in each place the thought is the same: ignorance of natural law, which is never broken, forces men to believe in the capricious action of the gods.

*oriri = esse*, which is preferred in v 88: Epicurus revealed that some things are possible, others are not.

76, 77.  *finita...haerens* is an explanation of the preceding words: A is possible, B impossible, because nature has limited the powers of each thing.

*denique*, 'in short.'

*quanam ratione*, 'on what principle,' 'by what law.'

*atque = i.e.*: what follows is explanatory.

*terminus* is a boundary stone, marking off one property from another: here it marks off the possible from the impossible for each thing.

*alte haerens*, 'deep-set,' i.e. immovable.

78, 79. This knowledge enables man to trample upon his oppressor, and raises him to the level of the gods.

*pedibus subiecta*: there is a clear reference to Lucr., and probably to these words, in Virg. *Georg.* ii 490 *felix qui potuit rerum cognoscere causas, | atque metus omnes et inexorabile fatum | subiecit pedibus.*

79. The asyndeton is very effective: it suggests that the positions are reversed instantaneously.

80-101. *Our system has been thought irreligious and wicked; but the truth is that the worst of actions have been prompted by what men call religion. Such was the sacrifice of Iphianassa at Aulis by the hand of her own father.*

80. *illud...uereor*, 'herein I fear one thing': *illud = τὸδε* or *ἐκείνο* and refers to what follows.

81. **impia**, 'atheistic,' because the Epicureans denied Providence. By a principle common in Latin verse, *impia*, though connected by grammar with *elementa*, really belongs to *rationis*: it is the 'system' which is atheistic, and the 'rudiments' of it are presumably less so than the advanced teaching. Lucr. takes this liberty, to avoid the cretic *impiae*.

**elementa**, 'alphabet,' 'A B C,' 'rudiments.'

82. **indugredi**: *indu* is an old form of *in*, seen in *ind-uere* (cf. *ex-uere*): Lucr. uses it to avoid the unmetrical *ingrēdi*; and all writers of dactylic verse, if determined to use the word *impērātor*, must use the form *induperator*.

**quod contra**, 'whereas on the contrary': cf. l. 221 *quod nunc*: the same fossilised *quod* is seen in *quodsi*.

**illa** expresses contempt or anger: *ista* is commoner in the former case.

83. **scelerosa atque impia**: the same charges, in reverse order, are retorted against religion. But Lucr. has resorted to an artifice: he now uses *impius* with a different meaning, as 'unnatural': the action of Agamemnon was *impium*, because it was contrary to the natural tie that binds father and child.

84. **quo pacto**, 'thus': cf. l. 912.

**Triuiui uirginis**: Artemis: cf. Catull. 34, 15: the origin of the title was unknown even in Varro's time.

85. **Iphianassai**: Lucr. treats this as another name for Iphigeneia. He appears to have made a mistake: for in Homer (*Il.* ix 145) Agamemnon, during the Trojan war, says that he has three daughters living—Chrysothemis, Laodice (the Homeric name of Electra), and Iphianassa; and Sophocles (*Elect.* 158) speaks of Iphianassa as living after the murder of Agamemnon. Thus the Greek authorities clearly distinguish the two daughters.

86. **prima uirorum**, 'chief of men': the neut. plur. is unusual but is so used by Ovid *Am.* i 9, 37 *summa ducum* (the chief commander), *Atrides*: there are many parallels in Greek.

87. **infula**: worn by her as the victim.

**comptus**, 'tresses,' is governed by *circum* in *circumdata*.

88. The order is: *profusa est pari parte* (in equal lengths) *ex utraque malarum*: cf. v 674 *et pariter (=pari parte) mollem malis demittere barbam*. An order so ambiguous is contrary to the practice of the Augustan poets.

89. **simul**, 'as soon as,' repeats the *simul* of l. 87.

90. **hunc propter**, 'near him': *propter* in this sense is commonly placed by Lucr. after the noun it governs: cf. l. 316. The priests hide the knife, to keep her in ignorance of her fate.

91. **aspectu suo**, 'at sight of her.'

**ciuis**, 'her countrymen,' the soldiers of Agamemnon: the inhabitants of Aulis in Boeotia, where the army was now detained, were not her *ciues*.

92. **genibus summissa**, 'lowered by her knees,' i.e. kneeling on her knees.

**petebat**: the impf. is the tense of dramatic description in both Greek and Latin: cf. l. 64: there is no equivalent in English.

93. **prodesse in tali tempore**: cf. Cic. *De Inuent.* ii 36 *iniquum esse non uitam honeste actam tali in tempore quam plurimum prodesse*.

The preposition *in* is used because *tempore* = circumstances: cf. l. 337: for *tempore* alone, cf. l. 102.

94. **princeps** = *prima*: i.e. she was his eldest child: this touch may come from Eurip. *I.A.* 1220 πρώτη σ' ἐκάλεσα πατέρα καὶ σὺ παῖδ' ἐμέ. Some of the details are perhaps borrowed from the famous description of this scene in Aesch. *Agam.* 215 foll.: thus this l. is an echo of κληδόνας πατρῶας (238), *sublata uirum manibus* of λαβεῖν ἀέρδην (244), while l. 99 recalls τέκνον δαίξω (218).

95. **sublata** and **deducta** are purposely used because they belong to the marriage ceremony, in which the bride was at one point lifted off the ground, and finally escorted home by the marriage company.

96. **sollemni more sacrorum**, 'the customary rite of sacrifice.'

97. **claro**, 'loud.'

**comitari**: passive.

**Hymenaeo**, properly the god of marriage, is here 'the marriage song.'

98. **casta inceste**, 'a fair maid foully slain': see n. to l. 42.

**tempore**, 'age.'

99. **mactatu**, 'by the sacrificing stroke': the word is not found except in Lucr.

100. **exitus** = ἐξοδος, 'egress': she was sacrificed that the right wind might blow and the fleet 'sail forth' from Aulis: *exitus* has not here its commoner metaphorical sense of 'result.'

**felix faustusque** : a reference to the form of speech used by the Romans when starting on public business of importance: *quod bonum, faustum, felix, fortunatumque sit* (Cic. *De Diu.* i 102).

101. **tantum...malorum**, 'such awful sin': the usual sense is 'so many evils.'

102-135. *Even if you come to believe in the doctrine of Epicurus, yet your belief may be shaken by the terrible stories that are falsely told of everlasting punishment after death. This fear, the great weapon of superstition, is due to ignorance of the soul's origin and destiny. Men do not know whether the soul is mortal or immortal; nor do they know whether it is destroyed by death, or goes down to a world below, or passes into other animals. (Our great poet Ennius held two of these theories at once: he believed in transmigration of the soul, but also in an abode of the dead below the earth. From there, he says, the ghost of Homer rose up and taught him.)*

*Therefore, to the two topics already promised, an explanation of the gods and heavenly bodies and the Atomic Theory, I must add a third of special importance, an explanation of the soul; and I must show that apparitions of the dead do not prove the immortality of the soul.*

102. **tutemet** : the double suffix is rare, but occurs iv 915.

**iam** is difficult : perhaps it = 'as things stand'; and so again in l. 104.

**uatum**, 'of the seers': the word includes all champions of the popular religion—poets, priests, and mythologers. *uates* underwent a curious change of meaning: from Ennius to Lucr. it was a contemptuous term and was ousted by the Greek word *poeta*; but Virgil and Horace ennobled the word: in their writings *uates* is superior to *poeta* and means 'an inspired poet.'

103. **desciscere** : Lucr. is sanguine and reckons on the conversion of Memmius: many passages (e.g. ll. 52, 53) show that he was not, when Lucr. was writing, an adherent of the Epicurean school.

104. **quippe etenim**, 'for, to be sure.'

105. **somnia**, 'fancies.' **quae**, 'enough to...'

**rationes**, 'calculations.'

106. **fortunas tuas turbare**, 'to cloud your happiness': for this sense of *fortunae* (often = wealth), cf. v 1179 (of the gods) *fortunisque ideo longe praestare putabant, | quod mortis timor haud*



*quemquam uexaret eorum*; and for the metaphor of *turbare*, cf. iii 37 *metus ille Acheruntis, | funditus humanam qui uitam turbat ab imo*.

Lucr. is reproducing a text of Epicurus (Usener *Epicurea* p. 30):  
 ἐκείνο δὲ κατανοεῖν ὅτι τάραχος ὁ κυριώτατος ταῖς ἀνθρωπίναις ψυχαῖς  
 γίγνεται ἐν τῷ αἰώνῳ τι δεινὸν προσδοκᾶν καὶ ὑποπτεῦειν κατὰ τοὺς  
 μύθους.

107. *certam*: *fnis* is regularly fem. in Lucr.: in ii 1116 the MSS. give *extremum...finem*, but edd. read *extremam*.

109. *religionibus atque minis*, 'the superstitious threats.'

This rhythm, in which the second foot, being a dactyl, ends with the end of a word, is common in Lucr. but hardly occurs in later writers of hexameter verse.

110. *nunc*, 'but as it is,' i.e. because they see no end: this logical *nunc*, following an unrealised condition, is very common in Lucr., e.g. ll. 169, 244, 340.

*ratio*, 'means.'

*restandi* = *resistendi*.

111. *poenas . . timendumst*: the constr., common in Lucr. (cf. l. 138), is rare elsewhere: of the two constructions found in Greek — *φοβητέον ἐστὶ τιμωρίας* and *φοβητέαι εἰσὶ τιμωρίαι*, Latin early discarded the former.

*in morte*. 'after death': lit. 'in the state of death,' ἐν τῷ τεθνάναι.

112. *ignoratur* = *homines ignorant*.

113. This l. states two opposite theories of the soul's origin: the first, that of Epicurus, teaches that the soul is born with the body; the second, that the soul existed before the body and finds its way into the body at birth.

*nata* = *natiua* and therefore = *mortalis*, because everything that was born must die: cf. iii 417 *nunc age, natiuos animantibus et mortalibus | esse animos animasque leues ut noscere possis*.

*nascentibus insinuetur*: supply *hominibus*: cf. iii 670 *si immortalis natura animai | constat, et in corpus nascentibus insinuat*. The ancient champions of the soul's immortality, chiefly the Platonists and Pythagoreans, believed that the life of the soul extends backward into the infinite past as well as forwards into the endless future; whereas the modern popular belief is that the soul was born, or created, but will never die.

114. **et** by itself is here misleading; therefore transl. 'and they do not know.' There follow three theories, not of the soul's origin but of what happens to the soul at bodily death.

**nobiscum** = with the body.

**dirempta**, 'broken up' into its component atoms. This is the theory of Epicurus and Lucr., that the soul, being dissolved into atoms, ceases to exist.

115. The second theory is the popular belief that the soul goes down to Hades.

**uisat** = *adeat*.

**uastasque lacunas**, 'desolate caverns': *uastus* here implies, not size but absence of life and joy. *lacunae* are 'hollows,' which may or may not be full of water: in Hades they are not.

116. The third theory is metempsychosis, or transmigration of the soul, held notably by Pythagoras.

**pecudes alias**, 'lower animals': *pecudes* is governed by the *in* of *insinuet*.

**diuinitus** = *diuino numine* of l. 154.

117-126 is a parenthesis: perhaps the chief motive for inserting it was that Lucr. might pay a tribute to Ennius who invented the Latin hexameter and prepared the way for the nobler verse of Lucr.

117. **ut cet.** refers only to the third theory.

**Ennius noster**, 'Roman Ennius': for the same epithet, cf. Cic. *Pro Arch.* 22.

At the beginning of his great poem, the *Annales*, Ennius told how, when he was sleeping on Mount Helicon, the ghost of Homer appeared and revealed to him that the soul of Homer had passed into a peacock and next into the body of Ennius: cf. Pers. 6, 10 *cor iubet hoc Enni, postquam destertuit esse | Maeonides, Quintus pauone ex Pythagoreo* (after he ceased to be Homer in his dream, plain Quintus after being a Pythagorean peacock).

118. **Helicone**: the hill of the Muses, with an allusion to his dream while sleeping there.

**perenni fronde coronam**: the evergreen bay, representing immortal fame.

119. **Italas** belongs in sense rather to *hominum* than *gentis*: cf. l. 474.

**clueret** = *eset*. Lucr. is notably fond of alternatives for the verb *esse*.

120. **praeterea tamen**: as well as transmigration, and in spite of transmigration: both theories cannot be true of the same person, of Homer, for instance.

**Acherusia templa**, 'a realm of Acheron': *Acheruns*, from *Ἀχέρων*, one of the infernal rivers, is the equivalent in early Latin for *Ἄδης*.

**templa** is used freely in early Latin with the sense of *loca*: Lucr. has *linguae templa* (the mouth) iv 624, *mentis templa* v 103; Plautus calls the sea *Neptunia templa* (*Mil. Glor.* 413).

122. 'Though neither our souls nor our bodies survive to get there': the subj. is due to *oratio obliqua*. The word *permanere* is regularly used of the continued existence of the soul: cf. Cic. *Tusc. Disp.* i 18 *animum censent alii statim dissipari, alii diu permanere*; Ovid *A. A.* ii 120 (of the mind) *solus ad extremos permanet ille rogos*.

123. **quaedam simulacra**, 'mysterious ghosts': the *εἰδωλα* of the Homeric poems, which are only a shadow of the living man, in body and in mind.

*simulacra...miris* is repeated by Virgil, *Georg.* i 477, but apparently in a different sense: for he means it to be impressive, whereas Lucr. is surely making fun of these ghosts: he says in effect, 'as they have no bodies, it is strange that they should be pale'; and he might have added: 'if the ghost has no soul, how could Homer's ghost instruct Ennius?'

124. **unde**, 'from there,' i.e. from Acheron.

**semper florentis**, *ἀειθαλοῦς*, 'immortal.'

125. **speciem** = *simulacrum*.

**lacrimas**: because the Homeric ghosts, when they appear in this world, weep for their own comfortless existence.

126. **rerum naturam** here = the transmigration of souls: the ghost of Homer did not lecture to Ennius on 'physics' in general, but explained how the soul of Homer had passed into Ennius: psychology is a part of *rerum natura*.

127-130 refer back to ll. 54, 55: I must, says Lucr., amend my original programme and add to it a third topic—a discussion of psychology. This is contained in Books iii and iv.

127. *cum*, 'not only,' answered by *tum* ('but also') in l. 130. *superis de rebus*, *περὶ τῶν μετεώρων*, 'concerning celestial phenomena.'

*habenda*, 'must be grasped.'

128. *ratio*, 'principle'; l. 129 *ratione*, 'manner'; l. 130 *ratione*, 'reasoning': Lucr. works this word hard: such persistent repetition, with different meanings or not, seems to us excessive; but Lucr. must have liked it.

*solis* *cet.*: he now explains what *superae res* are: for another definition, cf. v 84 *rebus in illis*, | *quae supera caput aetheriis cernuntur in oris*.

129. *qua ui...terris* refers to the Atomic Theory: it is true that its operation is not confined to the earth; but it is there that we can see the results produced by its working.

130. *tum*: *tunc* of MSS. is doubly wrong, for *tunc* is not used in enumeration, and is not used before a consonant.

*cum primis*: psychology is even more important than the other topics, because the chief aim of the system is to destroy the fear of death and what is supposed to follow death.

*sagaci*: see n. to l. 50.

131. *unde=ex quo*: it will be shown that the soul is formed of atoms.

*anima*, *ψυχή*, 'the soul' or vital principle.

*animus*, *λόγος*, 'the mind' or rational principle. *animi natura* is exactly=*animus*: for this form of periphrasis, very common in Lucr., see n. to l. 419.

*uidendum*, sc. *est*.

132-135 come in abruptly: it is likely that Lucr., while writing Book iv, inserted them provisionally here. The point is this: ghosts, which you might suppose to prove the survival of the soul, do not really prove it. In Book iv he explains that ghosts are material emanations from the living body which happen to survive it.

132. *et*: supply *uidendum est*.

Cf. iv 35 *simulacra*,... | *quae, quasi membranae summo de corpore rerum* | *dereptae, uolitant utroque citroque per auras*, | *atque eadem, nobis uigilantibus obuia, mentis* | *terrificant atque in somnis*.

*uigilantibus* is to be taken with *morbo affectis*: in sleep a man may see a ghost without fear; but if he sees one while awake, it is a

sign that he is in bad health. This would be clearer if Lucr. had written *somno*: and so Bentley wished to read: but the distinction between *-que* and *-ue* is slight in early Latin.

134. *audireque*: the Augustan poets did not append *-que* to a short *e*, finding the sound disagreeable.

135. Cf. iv 734 *quorum morte obita tellus amplectitur ossa*: the different order here avoids the cacophony of *coram, quorum*.

136-145. *I know the difficulty of writing a Latin poem on such a subject; but my friendship for you makes me willing to undergo any labour in order to enlighten your mind.*

This paragraph is out of place. *Terrorem* in l. 146 clearly refers to *terrificet* in l. 133. It is not probable that Lucr., if he had completed his work, would have left this irrelevant paragraph in this place: see the preliminary note on p. 39.

136. *nec me animi fallit*: cf. l. 922: *animi* is probably locative, 'in my mind': it is also used with some adjectives, such as *aeger* and *dubius*.

*reperita*, a transl. of *εὐρήματα*, is often used by Lucr. of philosophical discoveries.

137. *inlustrare*, 'to throw light on.'

*uersibus* the emphasis falls here: to write such a work in prose would have been far easier: why Lucr. chose verse, he tells in ll. 935-950.

*esse*, though it ends the verse, has no emphasis: see n. to l. 24.

138. *multa...sit agendum*: for the constr., see n. to l. 111.

*nouis uerbis*: Lucr. has to invent his terminology.

139. *egestatem linguae*: cf. l. 832 (where see n.) and iii 260 *patrii sermonis exestas*. Munro's admirable discussion of this point (vol. II p. 10 foll.) should be known to every student of Lucretius or of Latin. His main points are these: (1) classical Greek is the richer and more expressive tongue; (2) the Latin of Lucretius and Cicero was far superior to contemporary Greek; (3) Lucretius was able to convey the substance of any Greek original.

*rerum nouitatem*: Lucr. makes no pretensions to originality as a philosopher: his sole object is to reproduce the system of Epicurus: but one of his difficulties is, that philosophical questions (*res*) are unfamiliar (*nouae*) to Romans. It must be remembered that all the philosophic works of Cicero are of later date than this poem.

140. **uirtus**, 'worth': perhaps imagined by Lucr.: see n. to l. 26. **sperata** (= *quam spero*) is nearly the same as 'future.'

141. **suauis** may be either gen. or nom.

**amicitiae**: prob. governed by *uoluptas*; some make it gen. after *laborem*.

Epicurus attached great importance to friendship as productive of pleasure.

**sufferre**: MSS. have *efferre*: but, as Lucr. twice elsewhere has *sufferre laborem* (iii 999, v 1272), it seems likely that the *s* of *quemuis* caused the first letter of the verb to drop out.

142. **noctes**: direct acc. after *uigilare*: cf. Ovid *Her.* 12, 169 *noctes uigilantur amarae*.

**uigilare**, 'to watch,' i.e. to give the time for sleep to study: *lucubrare* is to cut off sleep at the other end for the same purpose. Even in his sleep, the dreams of Lucr. turned on the master passion: cf. iv 962 foll. (most men dream of the subject which absorbs their waking thoughts, lawyers of the courts, sailors of the sea) *nos* (I) *agere hoc autem et naturam quaerere rerum | semper et inuentam patriis exponere chartis*.

**serenas** adds poetry to the picture: the word means 'cloudless,' not 'windless.'

143. 'Seeking for language and for verse, by which I may in the end be able...': *demum* shows that the task is long and hard, and also emphasises again the old point, that the metrical difficulty is the most formidable.

145. **penitus** can mean either 'deeply' or 'thoroughly,' and so might qualify either *occultas* or *conuisere*. For the former, cf. *Ad Herenn.* iv 9 *fontis maximos penitus absconditos*; Cic. *D.N.D.* i 49 *res occultas et penitus abditas*. For *penitus conuisere*, cf. Cic. *De Or.* ii 99, *Brutus* 306.

But it is certain that Lucr. used *res occultae* without an adverb to denote the invisible atomic world: cf. l. 424. It is therefore better to take *penitus* with *conuisere*.

146-158. *The remedy for this fear is the study of philosophy. The first axiom of our system is this: Nothing is produced from nothing. It is from ignorance that men attribute to supernatural causes whatever they cannot understand in nature. Grasping this principle, we can dispense with supernatural agencies.*

146-148 are repeated in three other Books, near the beginning of each (ii 59, iii 91, vi 39). Any of these passages will show that *Lucretius* did not write the lines for Book i, but inserted them here as an after-thought. For elsewhere he begins by comparing mankind to children frightened by the dark, so that the mention of the sun, relevant there, is not really relevant here.

This is important, as a clear case of a practice which is probably common throughout the poem: see Index under 'insertions.'

146. *terrorem* refers back to *terrificet*, l. 133.

*tenebras*, as much as *terrorem*, belongs to *animi*.

147. *lucida tela diei*, 'the shining arrows of the light,' a noble synonym for *radii solis*.

148. *species*, 'the outward aspect,' *ratio*, 'the hidden law' of Nature: *naturae ratio* = *φυσιολογία*.

149. *cuus* refers to *ratio*: it scans here as a pyrrhic (~~): so *cui* is sometimes a pyrrhic in verse.

*hinc*, 'from what follows,' i.e. from the following principle.

150. *nullam rem e nilo gigni*: so Epicurus begins his outline of the system addressed to Herodotus: *οὐδὲν γινεται ἐκ τοῦ μὴ ὄντος*, every thing is produced from some previously existing matter. This rules out the arbitrary creation of things out of nothing by the gods. In a more general and abstract form, this principle implies that the qualities and limits of an effect are invariably determined by its cause. See n. to l. 160.

*diuinitus*, 'by divine power': cf. ll. 154, 158. From the scientific point of view this word is unnecessary and irrelevant. But the main object of *Lucretius* is not scientific: he values science only as a means of disproving current theology. See n. to l. 54, and ll. 931 foll.

151. *quippe*, 'for.'

*ita*, 'in the way we see.'

*continet*, 'paralyses.'

152. *multa*, sc. *opera*, to be taken from *operum* below: for the constr., cf. l. 16.

153. *causas*: cf. vi 54 *ignorantia causarum conferre deorum cogit ad imperium res et concedere regnum*. The quotation shows that *uidere* = *intelligere*.

154. *ac...rentur*, 'and which they suppose...': the second of two relatives is often omitted in Latin: see n. to l. 721.

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156. **quod sequimur**, 'the object of our search': Epicurus uses τὸ ζητούμενον in this sense.

**inde**, 'thereafter.'

157. **perspiciemus**, 'we shall ascertain.'

**et...et**, 'both...and': what follows explains *quod sequimur*.

**unde**, 'out of what': we shall learn that all *res* are made up out of atoms.

158. **opera**, 'the hand,' 'the working.' Not only the origin of visible things will become clear to us, but the cause of phenomena in general.

For the ending of the hexameter, cf. l. 184: in the Augustan poets, a verse ending with two dissyllables has a monosyllable before the first.

159-214. *For consider all living things, animal and vegetable, and mark their phenomena in regard to (1) birth or parentage; (2) season; (3) growth; (4) nutrition; (5) size: in every case you will find that the facts are against arbitrary creation and in favour of the Atomic Theory. (And the same is true with regard to (6) cultivation.)*

Lucr. does not attempt here to give formal proofs of the truth of the theory: he is content to urge that the theory is the only way of explaining a multitude of facts which we all know.

159. **nam**: the usual word to introduce the first of a series of arguments: cf. l. 217.

**omnibu'**: Cicero, writing at the beginning of 45 B.C., says that it had been considered a refinement in his earlier days but was now a provincialism, to drop the final *s* in pronouncing such words as *omnibus* and *dignus*, when a consonant followed (*Orator* 161). In this and other respects Lucr. deliberately adopted a somewhat archaic style for his poem. See *Introd.* p. xvii.

160. **nasci** = *gigni*: it applies to plants as well as animals.

**semine egeret**: from Epicurus (Usener *Epicurea* p. 5) οὐδὲν γίγνεται ἐκ τοῦ μὴ ὄντος. πᾶν γὰρ ἐκ παντὸς ἐγγίγνεται ἄν, σπερμάτων γε οὐδὲν προσδεόμενον.

161. First, the source from which animals are produced does not vary. Legend may say that Aphrodite sprang from the sea foam; but facts show that living beings are not so produced, any more than fish can grow, like trees, out of the ground.



**primum** here is not followed by *deinde*.

162. **squamigerum** may be either neut. sing., or the archaic form of the gen. plur.

**erumpere caelo**: whereas they really burst out of eggs.

163. **aliae pecudes**, 'flocks as well,' *alius* being used like ἄλλος.

164. Two statements are compressed here: (1) animals would not be true to type: a cow might produce tiger cubs; (2) animals would not have a fixed place of abode: you might find a tiger in your garden. The first statement is more directly relevant to the argument.

165. **constare**, 'to remain constant.'

166. **mutarentur**: *idem* is not carried on to this verb.

**ferre omnes omnia possent**, 'any tree could bear any fruit': Virgil repeats the phrase *Georg.* ii 109.

167-168. 'For, since there would not be material particles to produce each kind, how could things have a fixed source of existence?': i.e. the fixity of type cannot be explained by a theory of arbitrary creation.

**genitalia corpora cuique**: for this phrase, cf. l. 58: but here the verb (*essent*) accounts for the dat.

Note that *cuique* here and often in the context does not mean each thing but each *kind* of thing.

168. **mater**: for the metaphor, cf. ii 707 *omnia quando, | seminibus certis certa genetrice creata, | conservare genus crescentia posse uidemus*.

169. **at nunc**, 'but in reality': see n. to l. 110.

170. **inde** = *ex eo loco*. The subj. is *quidque*, to be taken out of *cuiusque* below: cf. l. 16.

171. **materies** is identical with *corpora prima*, and both mean 'atoms,' as Lucr. warned us above.

173. **inest secreta facultas**, 'there resides a distinct capacity': i.e. each kind of thing has its own reproductive system. The word 'secret' should be avoided: there are no mysteries in the Epicurean system.

174. **praeterea**: 'secondly': Lucr. uses this word generally to introduce the second of a series of arguments.

**uere**: each of the three ablatives is to be taken with *suadente*.

175. **uvas**, 'clusters,' seems a necessary correction of *uities*, the

MSS. reading: for (1) the vine-plant puts forth in spring, not in autumn; (2) it is easy to account for *uites* as a gloss of *uuas*.

**fundi** cannot be explained as = *fetus fundere* (l. 351).

176. **suo tempore**, 'at the proper time.'

178. **tempestatas**, *ῶπατ*, 'the seasons.'

**adsunt** = *fauent*.

**uluida**, 'quickened' by the favourable weather.

179. **teneras**, 'young.'

180. **fierent**: the subject to be supplied is 'plants.'

**subito**, 'unexpectedly.'

**exorerentur**: the ordinary form, *exorirentur*, is forbidden by the metre.

181. **spatio**, 'time': again l. 184.

182. **quippe ubi**, 'since in that case.' **forent**: conditional subj.

**genitali concillo**, 'from meeting to make' a plant: *concilium*, *σύνκρισις*, is the technical expression for the union of atoms to make a *res*, and *discidium* for the breaking up of such a union.

183. **tempore iniquo**, 'by the unfavourable season': the abl. is not temporal.

184. **porro**, 'thirdly.' **usus** = *opus*.

185. **seminis ad coltum**, 'for the coming together of (supplementary) atoms.' Growth of animals or plants is due to the accretion of appropriate atoms.

Lucr. used *semen* above (l. 160) for the atoms out of which things are originally made: here he uses it for the atoms by which they grow: in his view *nasci* and *crescere* were both parts of a single process.

186. 'For little children would grow to full size in a moment': such things may happen in Wonderland but not in real life.

Note that the sense of **subito** differs from that in l. 180.

187. **arbusta** are not 'bushes,' for that would weaken the argument, but 'forest trees'; the proper word, *arbores*, is rejected by the metre: see n. to l. 352. The verb, *salirent*, by itself suggests height.

188. **quando**, 'since.'

189. **tempore**: Munro printed this for *semine* of MSS., and inserted the l. which follows: similar endings account for the loss of a line. Lucr. is repeating the two points already stated, i.e. that all things grow from a fixed seed at a fixed season.

Editors who deny a lacuna here have to account for the solecism of *crescentes* agreeing with *omnia*: no similar instance, without metrical necessity, can be produced from the poem.

191. *sua de materia*, 'out of the atoms suited to it.'

192. *huc accedit, uti*, lit. 'to this is added, that...', i.e. 'besides,' 'fourthly.'

*certis imbribus anni*, 'fixed seasons for rain.'

193. *submittere*: cp. l. 8.

194. *secreta cibo* = *priuata cibo* of l. 1038.

*natura animantium* is exactly the same as *animalia*: see n. to l. 419.

196-198. The argument, too briefly stated by Lucr., is this: plants find their food in rain, and animals find their food in plants: hence we see that there are atoms common to rain and plants, and also atoms common to plants and animals, though the three products are quite distinct. An illustration is afforded by the letters of the alphabet: two words may denote very different things and yet have many letters in common. Lucr. loves this illustration: he felt that letters are to words very much what atoms are to *res*: see ll. 823-827, ii 688-694.

It seems that these three lines were hastily inserted here, when Lucr. was writing ll. 803-816: they are hardly intelligible, without the explanation given in the later passage. See n. at l. 146.

196. *corpora*, i.e. *prima corpora*, 'atoms': cf. l. 215.

*rebus*, 'to created things.'

198. *principiis*: abl. of *primordia*: see n. to l. 55.

199-204. The giants we read of in the old poets never existed; and that is because the atoms which make a man cannot combine to form a *res* above a certain size; the atoms which make an elephant or a giraffe are different, or combine differently, and can form something much bigger.

199. *denique* = fifthly.

200. *pedibus*, 'on foot.'

*per uada...transire*, 'to ford.'

201. Lucr. is thinking of the Homeric Cyclops: cf. *Od.* ix 481 ἦκε δ' ἀπορρήξας κορυφήν δρεος μεγάλοιο.

202. *uiuendo uincere*, 'to outlive.'

*saecula*: see n. to l. 20.

The amount of alliteration in this passage is remarkable, even for Lucr.

203. **reddita**, 'assigned.'

204. **e qua...oriri**, 'and what can arise out of those atoms is fixed.'

205-207. Lucr. here sums up, as if he had stated all his proofs. But next (ll. 208-214) he adds a sixth proof, of a less general kind, from agriculture. On comparison with v 210 foll., it seems highly probable that Lucr., while writing Book v, hastily inserted these seven lines in Book i, without necessary changes, and without even noticing that they ought to come after l. 204. See n. at l. 146.

207. **profferrier**: this archaic form of the pass. inf., common in Lucr., is used by him only when *-ier* is preceded by a long syllable; but *loquier* (= *loqui*) is found in earlier Latin.

208. **postremo** = sixthly.

209. **manibus**: either abl. of instrument, or dat. after *reddere*: Munro declares for the former.

210. **uidelicet** has the constr. of *uidere licet*.

211, 212 are taken from v 210 *si non fecundas uertentes uomere glebas | terraique solum subigentes cimus ad ortus, | sponte sua nequeant liquidas existere in auras*. In the hurry of transcription, Lucr. has made a little slip: it is not *primordia* (as is here stated) but *fruges* which the ploughman brings to birth from the soil.

213. **nulla**, sc. *primordia*.

**quaeque**, 'each kind of crop.'

214. **meliora**: they might also be much worse, if they did not grow from a *certum semen*: but that result might be attributed merely to want of cultivation.

215-264. *The second axiom of our system is this: Nothing is utterly destroyed: what appears to be destroyed is only resolved into the atoms that formed it. This axiom is proved by (1) the gradual disappearance of created things; (2) the actual existence of visible matter in this world; (3) the different force required to destroy different things; (4) the growth and youth and beauty of the world.*

Lucr. divides the law of Epicurus into two statements: (1) apparent destruction is merely disruption into atoms; (2) the atoms are indestructible. Of the four arguments which follow, the first and third deal with the former statement, the second and fourth with the latter.

As no fresh matter is created out of nothing, and no existing

matter is destroyed, it follows that the sum of matter in the universe is constant.

215. **huc accedit, uti=next**: cf. l. 192.

**corpora, i.e. prima corpora**, 'atoms.'

217. **nam** introduces the first of four proofs: see n. to l. 159.

**e cunctis partibus**, 'entirely': so *magna ex parte* etc.

218. **repente**, 'in a moment,' is the emphatic word here, where Lucr. is arguing from the longer or shorter space of *time* during which visible things last.

219. **usus=opus**: cf. l. 184.

220. **discidium**, *διάκρισις*, 'disruption': see n. to l. 183.

**nexus**, 'the fastenings' which unite one atom to another.

221. **quod nunc**, 'whereas in fact': for *quod*, see n. to l. 82, and, for *nunc*, n. to l. 110.

**aeterno semine**, 'of atoms that are indestructible.'

222. **uis obiit**, 'a force has encountered them': cf. l. 247.

**quae**=sufficient to....

223. **intus...per inania**, 'through the void spaces inside' the *res* in question: Latin requires *intro* to be used with verbs of motion such as *penetrare*; *intus* goes with *quae sunt* understood.

224. **nullius**: a noun here and l. 960.

**videri**, 'to be seen': this passive sense, rare in Cicero, is common in Lucr.

225. **praeterea**=secondly.

This second proof is taken from an extant text of Epicurus (Usener *l.l.* p. 5) *εἰ ἐφθείρετο τὸ ἀφανιζόμενον εἰς τὸ μὴ ὄν, πάντα ἄν ἀπωλώλει τὰ πράγματα, οὐκ ὄντων εἰς ἃ διελύετο* (if that which is removed from our sight were utterly destroyed, then all things would have ceased to be, because there would be no bodies into which they could be broken up).

227. **unde**, 'from what matter...?' Some source there must be, as we know already that *res* cannot be produced from nothing.

**generatim**, 'each according to its kind.'

228. **reducti**: *reducere* is never found in Lucr.

**daedala**: see n. to l. 7.

230. **ingenui fontes**, 'its native springs,' which the ancients believed to be one source of the sea water. But where, asks Lucr., do those springs get the water from?

**externa**, 'outside the sea': take *longe* with the verb.

231. **suppeditant**, 'keep full': this verb governs *mare*: in its general use, *suppeditare* takes an acc. of the thing supplied.

**pascit**: the stars feed on fire which they draw from the *aether* and Lucr. again asks where the *aether* gets fire from.

232. **debet**, 'is bound.'

233. The Epicurean doctrine that time is infinite is of importance in this and many other arguments of Lucr.

**consumpse** for *consumpsisse*: so *confluxet* for *confluxisset* (l. 991).

234-236. The argument is this: if the materials out of which our world is made, have not been destroyed in the destruction of previous worlds, then they can never be destroyed and are *aeterna*.

234. **spatio**, 'space of time': cf. l. 184.

**atque** is like our i.e.

**fuere**, 'there existed elements': a noun is needed in English.

235. **haec rerum summa**, 'our world,' lit. 'the aggregate of matter which we see': *rerum summa* is 'the universe.'

**refecta**, 'made anew': all *res*, in our world and in all worlds, are being constantly reduced to their atoms.

236. **certe**, 'assuredly.'

238. **denique** = thirdly: see n. to l. 17. Here and often *denique* introduces the penultimate argument and is followed by *postremo*. The distinction between the first proof and the third is this: the former shows that force is required, the second that a varying force is required for the disruption of a *res*.

239. **nisi...teneret**, 'if they were not held together by indestructible atoms': that *materies* = atoms is shown by *inter se*, which cannot be said of a single thing.

240. **indupedita**: fem. sing., agreeing with *materies*: see n. to *indugredi* l. 82.

241. **tactus** = mere contact.

**satis**: an adverb.

**profecto**, 'assuredly': a favourite word with Lucr.

242, 243. 'Since then there would be no things of substance indestructible, things to break up whose texture a proportionate force would be required.'

For *quippe ubi*, cf. l. 182.

243. **uis quaeque** = *uis pro textura cuiusque reperta* (l. 247) 'a

force which proves sufficient to master the texture of each thing.' (W. R. Hardie in *Classical Quarterly* v 104.)

244. **at nunc**: see n. to l. 110.

**principiorum**: see n. to l. 55.

245. **constant**=*sunt*: see n. to l. 119.

**materies**, 'the atoms' themselves.

246. **acris**, 'strong.'

247. **uis obeat**: cf. l. 222.

**pro**=to overcome. **reperta**, 'which proves.'

249. **discidio**, 'by means of disruption.'

**corpora material**: a new name for the same atoms.

250-261. The fourth argument is directed to the same point as the second: we see, in the case of rain which is converted into the fruits of the earth, an instance of a *res* which perishes, but whose atoms survive. But the philosopher has had his innings, and the poet now comes forward. What follows is not philosophy but mythology taken from the Greek dramatists: it describes the 'mystic marriage' (*εἰρὸς γάμος*) between the sky and the earth, to which all life and joy is due; and this gives occasion for a picture of spring, as beautiful in its simplicity as any poet ever drew. Cf. ii 991 *denique caelesti sumus omnes semine oriundi*; | *omnibus ille idem pater est, unde alma liquentis* | *umoris guttas mater cum terra recepit*, | *feta parit nitidas fruges arbustaque laeta* | *et genus humanum*.

250. **postremo** = fourthly.

252. **nitidae fruges**, 'goodly crops': a common phrase in Lucr.

253. **ipsae** is used to avoid *ἄρβῶρες* which is unmetrical. To translate *ipsae* 'of themselves' would be a scientific error, as Epicurus taught that all growth is due to accretion of atoms (l. 185).

254. **hinc...porro**, 'by them in turn': this series recurs constantly in this book: rain feeds plants, and plants feed animals. It is possible that Lucr. was, like Epicurus, a vegetarian; he always speaks of *fruges* as the natural food of man.

255. **pueris florere**, 'blossom with children': the verb suggests that children are like flowers: perhaps he is thinking of *κουροτρόφοι* as an epithet of *πόλεις*.

256. **nouls**, 'young.'

257. **fessae...pingui**, 'laden with fatness': *pingue* is treated as a noun.

258. *candens lacteus*: Lucr. does not dislike a double adjective without *et*, which is avoided by the Augustan poets: but one of the adjectives is generally equivalent to a genitive of material: so here *lacteus* = *lactis*. See n. to l. 946.

259. *noua proles* are the young animals and especially the lambs, as is shown by the delightful description that follows.

260. *infirmis*, 'staggering.'

*lasciua ludit*, 'frisks and gambols.'

261. *lacte mero*, lit. 'pure milk'; but Lucr. is thinking of the other meaning of *merum*: the milk intoxicates these young creatures like wine.

*nouellas* we must translate by 'young'; but so we lose the tenderness of the diminutive. Lucr. shows a marked sympathy for animals and interest in their life.

262. *uidentur*, sc. *perire*.

263. *quando*, 'since.'

*alid ex alio*, 'one thing out of another': *alid*, an older form, is here more convenient metrically than *aliud*: cf. ll. 407, 1115.

264. *adiuta*, 'reinforced.' The death of A lets loose a store of atoms which Nature uses to make B, a new *res* made out of old atoms.

The simplicity of these two lines should not blind the reader to their deep and tragical truth.

265-328. *That the atoms are invisible is no proof that they are not material. For there are in nature many invisible forces which work material effects. Consider (1) the wind, which produces in a tempest similar effects to a flood of waters; (2) the phenomena of smell, heat, and cold; (3) the phenomena of evaporation; (4) the invisible detrition of metal and stone; (5) the growth and decay of living things. We conclude that Nature works by means of material particles, so small as to be invisible.*

Lucr. is now preparing the way for his account of atoms and deals at length with a preliminary objection: is it possible that an invisible thing should be formed of matter? Epicurus taught that all knowledge is originally derived from the senses, so that it is specially difficult for him to deal with this objection. He himself described the atoms as *σώματα λόγῳ θεωρητά* (Usener *Epic.* p. 191).



265. **nunc age**, 'now mark me': a call for attention, which is repeated from time to time on a change of topic: cf. ll. 921, 953.

266. **genitas**, 'when once made.'

267. **nequa**, 'lest in any way.'

269, 270. 'I shall tell you of other material things as well as atoms (*praeterea*) which you yourself must admit to exist, though they are invisible.'

**tutè**: even though you do not accept our system.

**in rebus** = *in rerum numero*: cf. ll. 446, 691.

**uideri**: see n. to l. 224.

271. **principio**, 'in the first place': this begins the first of five arguments.

**incita**, 'when aroused.'

**pontum** seems to be required by the sense: the eye, looking on a stormy sea, would be arrested first by the expanse of angry water before noticing the ships in distress and the driving clouds. *portus* (Munro), *cautes* (Lachmann), and *corpus* (some editors) are all unsatisfactory.

272. **ruit**, 'overwhelms': cf. l. 289.

274. **montis supremos**, 'the mountain tops.'

275. **siluifragis**: see n. to l. 3.

276. **uentus** is required by the sense: the MSS. have *pontus*.

277. **uenti**: nom. plur.

**nimirum**, 'assuredly': very often used, but never ironically, by Lucr.: in Plautus too *mirum ni* is never ironical, but *mirum quin* always is.

**corpora caeca** = material though invisible things.

280. **alia**, 'other,' followed by **et** for *atque*, meaning 'than.'

**stragem** refers esp. to fallen trees: cf. l. 274 *sternit*.

281. **mollis aquae natura**, 'flowing water': in Lucr. *aquae natura* = *aqua*. Munro takes *mollis* as nom., others as gen.

284. **conciens**, 'piling on each other.'

**arbusta tota**: Lucr., if he could, would have written *arbores magnas*: cf. l. 274, and see n. to l. 187.

285. **uenientis aqual**, 'of the attacking water': a common sense of *uenire* in all periods.

286. **ita**, 'in such wise': *adeo* is constantly used thus by Livy and later writers, at the beginning of a clause.

**turbidus**, 'darkened.'

287. **molibus**, 'the piles' of the bridges.

288. **dat**, 'it causes': Lucr. often uses *dare* with the sense of *facere*, e.g. *dare motus = moueri*.

289. **grandia saxa**, 'the huge stones' of the bridges.

**ruit...obstat**, lit. 'where anything blocks its waves, it overthrows it': **quicquid** has the sense of *quidque*, as often in Lucr.: for the constr., cf. l. 15.

291. **procubuere**, 'have borne down': when *cum* means 'when-ever,' and refers to present time, it is followed in classical Latin by the perf. ind.: see n. to l. 319.

293. **uertice torto**, 'in whirling eddy.'

295. **etiam atque etiam** = 'I insist': again l. 1049.

296. **factis et moribus**, 'in their works and ways.'

297. **aperto**, 'visible' (*caecus*, 'invisible.')

The poetical amplitude of these descriptions of storms and flood must be attributed to Lucr. alone, and not to his Greek originals. Epicurus was a man of science who despised literature.

298. **tum porro** = secondly.

300. **aestus**, 'heats.'

**tuumur**: in Lucr. *tui* is always 'to see,' *tueri* either 'to see' or 'to protect.'

301. **usurpare**, 'to observe': lit. 'to handle' with the eyes.

**uoces**, 'articulate sounds.'

303. **sensus impellere**: again iv 527. Lucr. here suffers from the 'poverty of his native tongue.' Sounds etc. strike, not upon the senses themselves but on the organs of sensation: Epicurus can say *κινεῖν τὸ αἰσθητήριον*, but the word *sensorium* was not invented before the time of the schoolmen.

Lucr. deals at length with the phenomena of sensation iv 522-705.

305. **denique** = thirdly.

**fluctifrago**, *κυματοαγέι*, 'where the waves break': see n. to l. 3.

306. **eaedem** is scanned as a spondee.

307. **persederit**, 'permeated them.'

308. **ulsumst**: passive: see n. to l. 224.

**fugerit aestu**, 'it was dispelled by heat,' *fugio* being treated as a passive of *pello*.

309. **partis**, 'particles.'

311. **quin etiam** = fourthly.

**solis annis**, 'revolutions of the sun': *annus* is 'a circuit,' and *annulus* 'a little circuit.'

312. **subter**, 'on the inner side,' where it touches the skin.

**habendo**, *διὰ τὸ φορεῖν*, 'by wearing': the subject of the gerund is not the ring but the wearer: a gerund so used is not passive: there is merely a change of subject; and the object (*eum*) is omitted.

313. **stilicidi**, but *stilla*; *uilicus*, but *uilla*; *milia*, but *mille*: the rule is that, where *-ll-* follows *ī*, one *l* is dropped, if *ī* follows.

315. **strata ularum**, 'paved streets': cf. *sacpta domorum* (l. 489).

**iam** goes with **detrita**: when the process is complete, we see it; but we cannot see it while it is going on (*dum deteruntur*).

316. **portas propter**, 'near the gates of towns': for the position of *propter*, see n. to l. 90.

318. 'By the repeated touch of those who greet them as they pass by': cf. Cic. *Verr.* iv 94 (of a bronze statue of Hercules at Agrigentum) *rictum eius ac mentum paulo sit attritius, quod in precibus et gratulationibus non solum id uenerari uerum etiam osculari solent*. A familiar modern example is the toe of St Peter's statue at Rome.

319. **cum sunt detrita**, 'when they are worn down': cf. l. 315. I have altered *sint* of MSS. into *sunt*: for (1) the indicative is here required by Latin idiom: see n. to l. 291; and (2) copyists preferred the subjunctive after *cum* and often changed *u* to *i* (*sunt* to *sint*, *uicerunt* to *uicerint*) for that reason: see Madvig's note on Cic. *De Fin.* v 41. If *sint* be kept, *cum* is causal, 'since they have been worn away'; but l. 315 seems decisive against this interpretation.

320. **corpora**, 'particles.'

321. **speciem**, 'the power of seeing,' = *τὸ ὁρᾶν*.

**natura uidendi**, 'the nature of vision,' i.e. the limitation of our eyesight: our eyes, in fact, are not 'patent double million magnifying gas microscopes of hextra power,' or they might perceive those particles.

322. **postremo** = fifthly.

Lucr. now turns from inorganic substances to organic, so that l. 326 is out of place and ought to have been included in the previous argument. Here again the author never put the last hand to his work.

dies, 'time.'

324. **oculorum acies contenta**, 'exertion of the eyesight.'

326. **mare**: the acc. after *impendere* is archaic and rare; **Lucr.** has acc. after *accidere* v 608.

**uesco**, 'small,' 'fine': Bentley (*Hor. Sat.* i 2, 129) quotes this l. and explains the word as *tenui et minutissimis partibus constante*. See Conington's n. to *Virg. Georg.* iii 175.

327. **quodque in tempore**, 'at each moment': cf. l. 320.

**possis**, 'can one see': Memmius is not addressed here: this use of the 2nd pers. of the pres. subjunctive is constant in Latin.

328. **gerit res**, 'works,' 'does her business.'

The emphatic word here is *caecis*: Epicurus and **Lucr.** held that every change in nature was caused by the movement and combination of invisible particles of matter, called 'atoms.'

329-369. *But atoms are not the only factor of the universe: there is a second factor, which we call 'void.' The existence of void may be proved in three ways: (1) by the possibility of motion; (2) by the penetrability of solid bodies; (3) by the unlike weight of two bodies of like size. We must therefore believe that void exists.*

A special difficulty about 'void' must be noticed here. *Inane* (*κενόν*) is used by **Lucr.**, following Epicurus, to denote two different things: (1) empty space; (2) space, in which bodies rest, properly called *locus* (*τόπος*), or through which bodies move, properly called *spatium* (*χώρα*). In fact, both *locus* and *spatium* are sometimes inclusive, and sometimes exclusive, of the bodies contained in them: for the former, cf. l. 523 and see n. to l. 969.

329. **corporea...natura** = *corpore*: see n. to l. 419.

**stipata**, 'jammed together': a transl. of the technical term *συμπιλούμενα*.

330. **est in rebus**, 'is in the number of things,' 'actually exists': cf. ll. 270, 488. The words might mean 'exists inside things,' and have generally been so taken; but the present purpose of **Lucr.** is to prove the existence of void generally; and the existence of void *in things* is not proved by the possibility of motion. See n. to l. 369.

This l. is echoed in *Persius* i 1 *c curas hominum! quantum est in rebus inane!*

331. **quod**, 'this fact,' i.e. the existence of void.

332. **quaerere**, 'to be at a loss.'

333. **de summa rerum**: an ambiguous phrase: it means, either 'concerning the universe,' i.e. the composition of the universe (see n. to l. 235); or 'concerning the gist of the matter,' i.e. the most important points of the system. I prefer the latter explanation.

334 was not written by Lucr. For he was incapable of saying, 'For these reasons void exists,' before giving even the first of his proofs. A further objection has been raised to *locus intactus*, which does not occur elsewhere and is not an exact equivalent of ἀναφής φύσις, used by Epicurus as a synonym for κενόν. But the first objection is quite sufficient to condemn the verse.

It is also possible to explain its existence. In our best MS., O, there are occasional headings, each occupying a line, to explain what is coming. Thus after l. 334 O has DE INANI; and it is likely that a verse was fabricated from the rest of this heading, which may have run thus: *quapropter locus sit, intactum, inane uacansque*. Many of the extant headings begin with *quare*. After l. 704 O has the following l.

*neque ignem neque aera neque umorem principia esse*

which is really a heading but was taken by the copyist for a line of the text; for it is not written, like other headings, in capitals, but in the same letters as the text.

335. **esset**, sc. *inane*.

336. **officium**—**officere**, 'that which is the way of body, i.e. to get in the way...': in early Latin *officium* does not mean 'duty' (καθήκον), but 'activity,' 'habitual practice,' whether good or bad.

**exstat** = *est*: see n. to l. 119.

337. **officere**: a pun on *officium*: see n. to l. 65.

**in omni tempore**, 'under all conditions': see n. to l. 93.

**adesset**, 'would apply to.'

339. 'Since no <other> thing would be the first to give way.'

Body unmixed with void is found only in the atom; and the atom is absolutely unyielding and offers complete resistance. Consequently, as motion is a fact proved by the senses, there must be some element in the universe which offers no resistance: this element is *inane*.

340. **at nunc**: see n. to l. 110.

**sublima caeli**, 'high heaven': for the form of the adj., cf. ii 845 *sterila*; ii 1122 *hilaro*.

342. **ante oculos**, 'plainly': cf. l. 62.

In all these arguments, Lucr. follows strictly the method of Epicurus: in each an appeal to the senses (e.g. *oculi*) is followed by reasoning (*ratio*) based on that appeal: cf. l. 425.

343. **sollicito**, 'restless.'

**priuata** adds nothing to the meaning of *carerent*.

344. A new point is now made: if there were no void, not only would motion be impossible, but the atoms could never have combined to form created things (*res*) at all.

345. **materies** = *primordia*.

346. **praeterea** = secondly. Lucr. next proves the existence of void in created things.

**quamuis solidae**, 'however free from void': the opposite of *solidus* in this sense is *rarus*. Every *res* (created thing) without exception is *rara*.

347. **hinc**, 'from what follows.'

349. **liquidus** and *liquidus* are found in the same l. of Lucr., iv 1259 *liquidis et liquida crassis*: other poets shorten the first *i*.

**omnia**, 'all the place': common both in prose and poetry.

This vivid description is very characteristic and certainly cannot be derived from Epicurus.

350. **omne**, 'every part of.' Yet the body of an animal appears to be a solid thing.

352. **cibus**: trees feed on rain which they draw in by their roots and convert into sap.

**totas**: Lucr. wrote *arbusta* above, because the metre obliged him (see n. to l. 187); but he meant *arbores*, which suits his argument much better: and, to let the reader know this, he now writes *totas*, as if *arbores* had preceded. This is not a solecism but a deliberate artifice. No similar instance occurs in the poem.

354. **saepta**, 'walls': cf. iv 699 *saxea saepta*.

**clausa domorum**, 'shut houses,' i.e. the doors of houses.

355. **rigidum**, 'stiffening'; or perhaps 'chill.'

356. **quod**, 'a thing which...'

**nisi sint, ...ulderes**: an irregular condition often used in verse for metrical reasons: the irregularity appears to be confined to the protasis: cf. Tib. i 4, 63 *carmina ni sint, | ex umero Pelopis non nituisset ebur*.

**corpora:** to Lucr. sound and cold are *corpora*.

**quaeque,** 'in each case.'

358. **denique** = thirdly.

359. **nilo:** abl. of amount of difference.

**figura:** abl. of description: *figura* and *filum* are both used by Lucr. to represent  $\delta\gamma\kappa\omicron\varsigma$ , 'size': *magnitudo* is excluded by the metre.

361. **corporis,** governed by *tantundem*, is delayed to the relative clause: see n. to l. 16.

**plumbo,** 'a lump of lead' of equal size.

**pendere:** supply as subject *lanae glomus*.

362. **deorsum** scans as a spondee.

363. **natura inanis** = *inane*: see n. to l. 419.

**manet,** 'always is.'

364. **quod:** transl. 'when a thing....'

**uidetur,** 'is shown to be.'

365. **declarat,** 'it makes plain.'

366. **gravius,** 'the heavier thing,' i.e. the lead.

367. **dedicat,** 'tells us': cf. l. 422.

368. **est,** 'exists.'

**ratione:** see n. to l. 342.

369. **admixtum rebus.** 'interspersed throughout creation': cf. ll. 382, 655, and also l. 660. Here, as in l. 330, Lucr. is speaking of void generally; when he refers to void inside things, he makes this clear by inserting *in*, e.g. ll. 511, 569.

370-397. *Some deny the existence of void and explain motion as due to a different cause: they say that motion is a mere exchange of place between two objects. But neither of two objects, e.g. a fish and water, could begin to move, if there were no void. Again, if two flat bodies part suddenly after contact, the space left between them is filled with air by a gradual process and not instantly. Nor can their moving apart be explained by contraction of the air outside them. And indeed such contraction of air cannot take place without the existence of void.*

370. **illud in his rebus:** cf. l. 80: *illud* is governed by *praecurrere*, 'to anticipate.'

371. **fiungunt,** 'falsely teach.'

372. **squamigeris** = *piscibus*: so Lucr. uses *lanigeras* for *oves* and *pennipotentis* for *aves*.

**latices** = *aquam*.

**nitentibus**: Lucr. uses *niti* of all forms of motion, walking and flying as well as swimming.

373. **liquidas uias**, 'a watery way': a reminiscence of the Homeric ὑγρὰ κέλευθα.

**post**: adverb.

374. **linquant**: subjunctive of *oratio obliqua*.

The opponents of void say that, when a fish swims, the water makes way in front and flows to the space in its wake. No, says Lucr.: neither fish nor water could move till the other had moved to make room for it.

According to Lucr., the fish are able to move because there are void spaces (*inania*) in the water.

375. **inter se—locum**, 'can move by exchanging places': *inter se*, in spite of its position, refers wholly to *mutare*.

376. **quamuis—plena**, 'although all things are full,' i.e. although there is no void in the universe.

377. **scilicet**, 'you must know.'

**totum** acts as an adv. qualifying *falsa*, 'wholly false.'

378. **quo**, 'in what direction?'

**tandem**, = 'I ask,' adds liveliness to the question.

381. **priuandumst corpora**: see n. to l. III.

382. **admixtum rebus**: see n. to l. 369.

383. **initum**, 'beginning': used here and elsewhere by Lucr. to represent ἀρχή, because his metre rejects the proper word *initium*: not to be confused with *initum* of l. 13.

**moendi** = τοῦ κινεῖσθαι.

384. **postremo** introduces the second section of the paragraph: perhaps it is used here because this section ends the whole discussion about void.

**de concursu**, 'immediately after contact.'

**lata** seems to have the sense of *plana*, 'smooth': the two surfaces must meet at every point, if no air is to be left between them.

Giussani suggests, with great probability, that these bodies are a pair of cymbals which clash and part. Lucr. takes his illustrations from real life, not from a text-book on mechanics.

385. **cita** = quickly.

**nempe**, 'it is true.'



Lucr. here makes a concession to his antagonist: the space thus created will be filled by air; but, he goes on, the process must take time, and, until it is complete, there is void between the bodies.

The explanation of motion here refuted was stated above, ll. 372-376.

387. **porro**, 'now.'

**circum celerantibus**, 'swift-circling.'

388. **uno tempore**, 'in one moment.'

389. **primum quemque**, τὸν ἀεὶ πρῶτον, 'first one spot and then another.'

392. 'Supposes that this < moving apart > takes place then, because the air contracts' and so makes room for them.

Note that this is a second false explanation of motion.

**id fieri** = *corpora dissilire*.

**aer** is the air outside the two bodies.

393, 394. 'He is mistaken; for at that moment a void is formed < between the bodies > which did not exist before; and a space which was void before < in the air outside the bodies > is filled up.'

**tum**, i.e. at the moment of separation.

395. **tali ratione**, 'in the manner described': cf. l. 1081.

**denserier**: for the form, see n. to l. 207.

396. **si iam** and **ut iam** are used with the pres. subj. to state a hypothesis provisionally, for the sake of argument: see Madvig on Cic. *De Fin.* iv 66. Cf. l. 968.

397. **trahere**, 'to withdraw,' intrans.

398-417. *There are many other proofs of the existence of Void; but these are enough, if you prove an earnest disciple. If you show slackness, I have an endless store of arguments which our whole lives would not exhaust.*

398. **quapropter**, impossible in l. 334, is in place here, after the proofs have been given.

**causando**, 'by raising objections.'

**multa** goes with *moreris*: cf. v 91 *ne te in promissis plura moremur*.

399. **in rebus**: see n. to l. 330.

400. **praeterea** = *alid*.

401. **fidem conradere**, 'to scrape together evidence'; the verb seems contemptuous.

402. *uestigia*, 'footprints,' i.e. outlines, hints: this word suggested the simile which follows.

*sagaci*: see n. to l. 50.

403. *sunt*: for the emphatic position, see n. to l. 24.

*tutē*, not *tutē*.

404. *ferai*, not *ferarum* of recent edd., is required: Lucr. has *montiuagum genus ferarum* (ii 597, 1081); and the epithet is quite unsuitable to a pack of hounds which are kept in order by the huntsman till they find, and then run straight upon the scent.

405. *naribus*, 'by scent.'

*quietes*, 'resting-place,' 'lair.'

407. *alid ex alio*: see n. to l. 263.

*uidere*, 'to understand.'

408. *caecas latebras*, 'dark corners.'

409. *insinuare*: here intrans.

*protrahere*: Lucr. is still thinking of his simile and compares the search for truth to the drawing of a badger from its earth.

410. *pigraris*: contraction of *pigraveris*.

*ab re*, 'from the matter in hand.'

411. *de plano*, 'offhand,' with no pomp and circumstance: a legal phrase: the magistrate might speak either *pro tribunali*, 'from the judgment-seat,' or *de plano*, 'from the level ground'; hence the latter comes to mean 'in plain terms.'

It is very characteristic of Lucr. that he proposes to treat the reluctance of his pupil by a still larger dose of the same medicine.

412. *fontibu' magnis*: the works of Epicurus, the *chartae* which are praised in iii 10.

413. *suavis*, 'musical.'

*diti*, 'richly stored.'

414. *tarda*: fem. sing.: Lucr. is indifferent to the ambiguity.

415. *uitai claustra*, 'the fortress of life,' which is besieged by old age and death: this fine metaphor is repeated in iii 396.

416. *re*, 'topic': of the existence of void, for example, Lucr. says that he could go on adding proof to proof, until both he and Memmius died of old age.

*uersibus*, 'in my poem.'

418-448. *The universe consists of two substances only: (1) body, the existence of which is proved by our senses; (2) void, the existence*

of which is necessary for the position and movement of bodies. There is no third substance. For every existing thing is either tangible or intangible; but everything tangible is body, and everything intangible is void. Again, every existing thing is either active or acted upon (in which cases it is body), or merely a receptacle (in which case it is void). There is therefore no third substance.

Lucr. now returns from his exhortation to Memmius and takes up the exposition again. For this purpose he translates an extant text of Epicurus in his Letter to Herodotus: τὸ πᾶν ἐστὶ σώματα καὶ τόπος· σώματα μὲν γὰρ ὡς ἔστιν, αὐτὴ ἡ αἰσθησις ἐπὶ πάντων μαρτυρεῖ, καθ' ἣν ἀναγκαῖον τὸ ἀδελον τῷ λογισμῷ τεκμαίρεσθαι. τόπος δὲ εἰ μὴ ἦν, δν κενὸν καὶ χώραν καὶ ἀναφῆ φύσιν ὀνομάζομεν, οὐκ ἂν εἶχε τὰ σώματα ὅπου ἦν οὐδὲ δι' οὗ ἐκινεῖτο (Usener *Epicurea* p. 6). All this is closely translated by Lucr.; and there is no other passage of equal length in the poem which we can compare with its source in the text of Epicurus.

This Letter to Herodotus, one of the documents preserved in the Tenth Book of Diogenes Laertius, was known as the *Short Summary* (μικρὰ ἐπιτομή) of the Epicurean system. There was also a *Long Summary* (μακρὰ ἐπιτομή); and recent editors have argued that the *Long Summary* is the main source which Lucr. used. This cannot be proved or disproved, because the *Long Summary* is not extant. But this may safely be said—that Lucr., who speaks of the *magni fontes* (l. 412) and *aurea dicta* (iii 12) of his revered master, was not the man to shrink from studying the great work unabridged, the *Περὶ Φύσεως* itself, in all its thirty-seven volumes.

418. **ut repetam...pertexere**, 'to resume the weaving of my task': the inf. is an accus., governed by *repetam*.

419, 420. 'The universe, then, is formed of two substances.'

419. **omnis**: gen. sing. neut. governed by *natura*: cf. Plut. *Adu. Col.* c. 11 (of Epicurus) τὸ πᾶν παντὸς φύσιν ὀνομάζειν εἶωθε. The notable fondness of Lucr. for this form of periphrasis (e.g. *natura inanis* for *inane* l. 363) may be due to the example of Epicurus.

Cf. Cic. *D.N.D.* ii 82 (Epicurus teaches) *omnium, quae sint, naturam esse corpora et inane et quae iis accidunt*.

**omnis ut est** is a genitive, suited to the metre, of *omne quod est* (l. 958).

**igitur**, 'to resume.'

**per se** belongs to *rebus*, not to *est*: other things, as we shall see, exist in relation to body or void; but body and void exist *per se*, i.e. are substances: cf. ll. 422, 440, 459.

420. **constitit** = *constat*, 'consists': a common use of this past tense, e.g. iii 178: cf. *συνέστηκε*.

**corpora** here = 'atoms': but in l. 422 *corpus* is not 'an atom,' but 'matter' i.e. *aliquid quod tangi potest*. The existence of matter formed of atoms is proved by sensation, but the existence of atoms could never be so proved.

421. Space, in which bodies are placed, is properly *locus* (τόπος); space, through which bodies move, is *spatium* (χώρα): neither of these is synonymous with *inane* (κενόν).

**diuersa**, 'in different directions.'

The atoms move and have their being in void, like fish in the sea: see n. to l. 969.

422. **per se...sensus** = *αὐτῆ ἢ αἰσθησις* of Epicurus, 'sensation of itself.'

**communis**, 'common to all men,' appears to be a translation of *ἐπὶ πάντων*.

That the existence of matter is proved by sensation, was the belief of Dr Johnson also. Boswell asked him whether it was possible to refute Berkeley's doctrine that matter has no existence: 'I never shall forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, till he rebounded from it, "I refute it thus!"' The *sensus* of his toe seemed to Johnson sufficient proof of the existence of the stone.

423. **cui**, governed by *fides*, 'our belief in it,' i.e. in sensation.

This belief Lucr. here and iv 505 calls *prima fides*, meaning that sensation is the original source of all knowledge. According to Epicurus, sensation is the standard of truth, and every impression of the senses is clear evidence (*ἐνάργεια*); Lucr. uses the adj. *manifestum* to render this technical term. See n. to l. 694.

**fundata ualebit**, 'is firmly established.'

424. **haud erit**, 'there will be no standard': a noun is required in English.

**occultis rebus**, 'the invisible world,' τὸ ἀδηλον of Epicurus. Lucr. uses this phrase to denote the invisible atoms and invisible void: see n. to l. 145.

425. **confirmare**, 'to prove.'

**animi ratione** = λογισμῶ of Epicurus: the mind can exercise reason upon the evidence supplied by the senses.

428. **esse**: for the emphatic position, see n. to l. 24.

**neque—meare**, 'nor to travel at all in any direction, this way or that.'

429. **ante**: the reference is to ll. 378 foll., where the movement of bodies was discussed: *meare* here = *procedere et concedere* there.

(So Munro; but Giussani, perhaps rightly, supposes that the reference is to ll. 335 foll.)

430. **praeterea** = *praeter inane et corpora* (l. 445).

431. **esse**, 'exists,' is made emphatic by position. Lucr. explains here more fully what he means by *per se esse*.

432. 'To count, so to say, as the discovery of a third substance.' **numero** adds nothing to the sense.

**natura** here = 'primal essence': so in l. 446.

433. The meaning is: we shall not include in the list of things that exist anything that does not exist *per se*. **ipsum** = *per se*.

The argument that follows takes the form of a dilemma.

434. **cui si tactus erit**, 'but if it admit of touch,' i.e. of touching and being touched: cf. l. 304.

435, 436. 'Then, provided it exist, it will, by a large or at any rate a small addition, increase the amount of body and be included in the aggregate' of body.

The transposition is necessary: the attempt to keep the MS. order of the lines, with the reading *aliquo*, fails; because void cannot have *augmen* (bulk).

437. **intactile** = ἀναφές, 'incapable of touching or being touched': the word is not used again by Lucr.

440. **praeterea**, 'secondly': quite unlike *praeterea* of l. 430.

This argument takes the form of a trilemma.

441. **aliis...agentibus**: abl. absol., = *dum aliae res agunt*, 'other things being the agents.'

**fungi** = πάσχειν, 'to be acted upon': often used by Lucr. as the passive of *facere* = ποιεῖν, 'to act.'

442. **possint**: Munro keeps *possunt* of MSS., comparing *ita ut debent* of ii 901: but the presence here of *in eo* surely forbids this explanation.

**res** has two senses here: with *esse* it = *corpora*; with *geri* it = 'processes': cf. ll. 129, 328.

443. Cf. Epicurus: τὸ κενὸν οὔτε ποιῆσαι οὔτε παθεῖν δύναται ἀλλὰ κίνησιν μόνον δι' ἑαυτοῦ τοῖς σώμασι παρέχεται (Usener *l.l.* p. 22).

444. **uacans**, 'vacancy,' is here treated as a noun.

445. **per se** goes with *natura*, as it did with *rebus* in l. 419.

446. **rerum in numero** = *in rebus* of l. 330, 399, 488 etc. : lit. 'in the list of things,' i.e. in nature.

447, 448. Knowledge is derived (1) from our senses, (2) from reasoning based upon sense-knowledge.

**apisci**, 'to grasp': the compound *adipisci* was generally preferred to the simple form.

449-482. *There are two classes of things which exist merely in relation to either body or void: these are (1) inseparable properties; (2) separable accidents. Time also has no separate existence, but is merely the accident of occurrences. The Stoics maintain that incidents of past history have separate existence; but the truth is that all incidents or occurrences exist merely in relation to one of the two substances, body and void.*

*Coniuncta* and *euenta* are the terms used by Lucr. to represent ἀΐδια παρακολουθοῦντα and συμπτώματα of Epicurus.

449. **quaecumque cluent**, 'whatever names these two things are called,' i.e. whatever qualities are predicated of body and void. The subject, *hae duae res*, must be taken from the dat. which follows: for this constr., see n. to l. 15. Lucr. seems here to translate a phrase of Epicurus in his discussion of this subject (Usener *l.l.* p. 22) ὅσα κατηγορεῖται σώματος (all the qualities that are predicated of body).

The usual rendering, 'whatever things are spoken of,' is unsatisfactory, because this must include body and void themselves. Also, *cluere* seems always to be used with a predicate.

(This explanation is Mr Vesey's.)

450. **harum**: so Bernays for *horum* of MSS.: the change seems necessary, because *horum* could only refer to *coniuncta*.

451. **nusquam**, 'in no case.'

452. **discidio**, 'disruption,' not of the *coniunctum* but of the *res* to which it belongs. Thus weight is the 'inseparable property' of a stone (l. 453); and a stone which loses weight ceases to be a stone at all.

**seque gregari**: the tmesis is due to the requirements of the metre.

453, 454. The second l. was expelled from the text by Lachmann for two reasons: (1) the two datives ought to be genitives; (2) nouns formed like *intactus* are used only in the abl. sing.: thus there is a word *iniussu*, but the nom. *iniussus* is never found. The second objection is not fatal: Lucr. might have made and used the word *intactus* to represent ἀνάφεια (intangibility); and it is noticeable that Epicurus gives ἀντιτυπία (impenetrability) as a property of body, and εἰξίς (yielding) as a property of void. The real difficulty is that, if we accept l. 454, we must admit in l. 453 a dative in -āī, a form which is never found in the extant literature. I believe therefore that the l. should be ejected from the text.

455. *paupertas* etc. should be accusatives: the irregularity is rare in Latin but seems natural enough.

Metre has prevented Lucr. from arranging his pairs symmetrically: if he had written *libertas diuitiaequē*, | *paupertas*, the nouns would be in the right order, but the -*que* would spoil the arrangement.

456. *cetera—abituque*, 'and all other things which may come and go without injury to the thing itself': e.g. a man, whether a slave or free, is still a man.

457. *natura* here, and in l. 687, denotes the *res per se*, the substance to which the accidents belong.

458. *ut par est*, 'as it is right we should': i.e. we use the word *euentum* in its natural sense of 'occurrences.'

459. *item*: like other *euenta*, time is not an essential part of the existence of things or persons, but, unlike them, is conceivable in relation, not to *corpora* but to their *euenta*: it is an *euentum euentorum*.

It is remarkable that Lucr., while saying what time is not, does not tell us what it is. But the definition of Epicurus is as follows—*σύμπτωμα συμπτωμάτων παρεπόμενον πάθεισι καὶ ἀπαθείαισι καὶ κινήσεισι καὶ μοναῖς* (Usener *l. l.* p. 126): and the latter part of the definition is reproduced by Lucr.

*rebus ab ipsis*, 'simply from occurrences': these are called *res gestae* below.

460. *consequitur sensus*, 'our feeling grasps,' i.e. we realise. *sensus* here is mental perception: one might expect *ratio* to be used instead.

*in aeuo*, 'in the past.'

461. *instet*, 'is present now': this use of *instare* is perhaps taken from Greek, where *ἐνεστώς* = 'present': it is seen in our phrase, 'on the 10th inst.,' i.e. of the present month.

*porro* = thirdly.

*deinde sequatur*, 'follows later,' i.e. the future.

462. The *non* contained in *nec* belongs to *sentire*.

*per se tempus*, 'time in the abstract': cf. *per se rebus* (l. 419).

463. *rerum* belongs to *quiete* as much as to *motu*.

Compare the definition of Epicurus quoted above.

464. From time *Lucr.* now passes to the occurrences of past history, and states that these are all merely *euenta* of *corpus* and *locus*. He adorns his argument by selecting the Trojan war as a type of actions and passions in the past.

*denique*, 'further.' He begins by refuting a fallacy, and then starts the statement of his own view with a second *denique* (l. 471).

*Tyndaridem—esse*, 'when men say that occurrences, such as the rape of Helen and the conquest of the Trojans by warfare, exist...'

465. *dicunt*: the unexpressed subject is 'the Stoics,' who held that time had independent existence.

466. *per se* goes with *esse*.

467-470. The Stoics prove the separate existence of past incidents thus: 'the men who fought at Troy are long dead: therefore their actions and passions (*euenta*) have existence apart from the men (*per se sunt*).' No, says *Lucr.* (ll. 469, 470): the men are dead, but the place remains, and the actions and passions are *euenta loci* as well as *euenta corporis*.

468. *abstulerit*: subj. of *oratio obliqua*: this is the argument used by the Stoics. *aetas*, 'time.'

469. *terrīs* of MSS., constantly emended, was explained by R. L. Dunbabin (*Classical Quarterly* July 1917) to mean 'the world,' and *regiones* 'particular districts,' such as Troy: so *Virg. Aen. i* 460 *quae regio in terris nostri non plena laboris?* Of the events of past history some (*aliud*) have affected the whole world, others (*aliud*) only particular districts. Munro read *Teucris* and Bernays *sacclis*, to represent *corpus*; but it is not necessary that *corpus* should be referred to here.

471. *denique*, 'further,' = 'the fact is.' Having disposed of the Stoic argument, *Lucr.* now proceeds to state his own view.



*materies rerum* = *corpus*.

472. *locus ac spatium* are used here by Lucr. for *inane*, to show his meaning—that the movements described in the next five lines were only made possible by the existence of void as well as body: cf. ll. 426, 427.

474. Phrygio belongs in sense to *Alexandri*, not to *pectore*: the figure is used here, to avoid repetition of the *i* sound.

Alexandros is an Homeric name for Paris.

475. *clara*, 'famous.'

476. *Troianis*: abl. governed by *clam*: only one other instance of this construction is quoted—Caes. *B. C.* ii 32, 8 *nonne sibi clam uobis salutem fuga petiuit?*

*durateus...equus*: the epithet is taken from Hom. *Od.* viii 493: Plautus (*Bacch.* 936) has *ligneus equus*. Lucr. does not shrink from using Greek words: thus for 'cubs' he uses, not *catuli*, as one might expect, but *scymni* (σκύμνοι) v 1036; which makes it surprising that he never uses the name *atomi* for his *primordia*.

477. *nocturno*: the Greek warriors sallied forth from the womb of the horse by night.

For this comparison between the fire of love in the heart of Paris, and the fire that burnt Troy, cf. Cic. *Verr.* ii 5, 92 *una atque eadem nox erat, qua praetor amoris turpissimi flamma, classis Romana praedonum incendio conflagrabat.*

478. *funditus omnis*, 'from first to last.'

479. *constare* and *esse* seem to mean the same here.

480. *nec—eadem*, 'and are not spoken of in the same way,' i.e. are not terms of the same kind.

*eadem* is a spondee here: cf. *eadem* l. 306.

483–502. *Bodies are of two kinds: (1) simple; (2) composite. The simple bodies, because they contain no void, are indestructible. All created things, even if they appear to contain no void, do really contain it, as experiment proves. But reason proves the existence of these simple bodies; and these we maintain to be the primal elements of creation.*

Lucr. is again using the *Short Summary* of Epicurus: τῶν σωμάτων τὰ μὲν ἐστὶ συγκρίσεις (*concilia*), τὰ δ' ἐξ ὧν αἱ συγκρίσεις πεποληνται ταῦτα (the latter) δὲ ἐστὶν ἄτομα καὶ ἀμετάβλητα (*unchangeable*) (Usener *l.l.* p. 6).

484. **concilium** = σύγκρισις: see n. to l. 182.

All composite *corpora* are *res*, 'created things.'

486. **stinguere**, 'to destroy.'

**solido**: the adj. has in this connexion the technical sense of 'free from void': it stands for the epithets *πλήρης* and *στερεός* used by Epicurus.

**demum** goes with *ea*, 'they, and they only....'

487. **etsi**, 'and yet.'

488. **in robus**: see n. to l. 330.

489. **saepta domorum**, 'the walls of houses': cf. l. 354. These instances are repeated with additions vi 936 foll.

To our senses stone and metal appear to be *solida*; but they are not so in reality, because other substances can pass through them, or they can be broken up.

491. **fere**, 'commonly,' is A. E. Housman's conjecture for *fero*: he quotes Virg. *Georg.* iii 363 *aeraque dissiliunt uolgo*.

**uapore**, 'by heat,' the only meaning of the word in Lucr.: in his view, heat was a stream of material particles of fire.

492. **cum**, 'both,' followed by *tum*, 'and': I follow Ernout in keeping the MS. reading.

493. **glacies aeris**, 'the ice of copper': *glacies* was probably chosen to suit the verb *liquescit* (melts).

494. **penetrable**: active: cf. Virg. *Georg.* i 93 *penetrabile frigus*.

495. **quando** = *quandoquidem*, 'since.'

**rite**, 'in customary fashion.'

496. **sensimus**, 'we feel at once': some explain this as a 'gnomic' aorist—'we often feel'; but Madvig shows that this construction was probably unknown in Latin of the time of Lucr. (*Opusc. Acad.* p. 492).

**lymp harum rore** is merely a periphrasis for *aqua*. The Romans poured water, either hot or cold, into their wine.

497. *Sensus* (αἴσθησις) cannot discover the existence of anything *solidum*; but *ratio* (λογισμός, reasoning) forces us to admit it.

498. **natura rerum** here = science, i.e. the study of science.

499. Lucr. promises that in a few verses he will prove two qualities of atoms: (1) *soliditas*; (2) *aeternitas*. The second of these depends upon the first.

502. **omnis rerum summa**, 'the universe,' i.e. all the *res* (created things) which the universe contains.

503-550. *These atoms are solid. For (1) body and void each exist per se: where one is, the other is not; therefore the atoms, being pure body, are without void. (2) The fact that created things contain void shows that the substance which contains this void, is itself without void. These atoms are also eternal. For (1) it is only the presence of void in a thing, which makes it liable to be broken up; and therefore the atoms, because they contain no void, cannot be broken up. And (2), if the atoms were not eternal, all things would have been reduced to nothing, and the visible world would have been produced out of nothing.*

Lucr. first gives two proofs that his atoms are *solida* (ll. 503-519), and then two proofs that they are *aeterna* (ll. 520-547), and sums up in conclusion (ll. 548-550). But the course of the argument is not kept clear, as will be shown below. Many alterations, by transposition or rejection of verses, have been proposed; but none clears up the difficulties. This paragraph, and the whole passage down to l. 634, must have been left by the author in an unfinished state.

503. *natura duarum rerum* = *duae res*: these are the two 'substances,' body and void.

504. *longe* goes with *dissimilis*.

505. Where Lucr. is insisting on the absolute distinction between body and void, he ought clearly to call the latter *inane*, and not *locus, res in quo quaeque geruntur*; but he has inappropriately retained this phrase from l. 482. See n. before l. 329.

506. *sibi per se, αὐτὴν καθ' αὐτήν*, 'for and by itself': a stronger form of *per se*: again iii 684.

If each of the substances excludes the other, then an atom, which is *corpus*, can contain no void.

508. *eā* = *ibi*.

*tenet se*, 'maintains itself,' i.e. 'is.'

510. *ac* here is our i.e.

511. *praeterea* = secondly.

This second argument deals with atoms *in concilio*, i.e. when they have combined to form a *res*, here called *res genita*, 'a thing produced' out of atoms, with an admixture of void.

512. *materiem*, 'atoms.'

*circum*: adverb.

*constare* = *esse*.

514. *corpore* has not its technical sense here: transl. 'mass.'

515. 'Unless you admit that the substance which bounds the void, is <itself> free from void.'

*cohibet* does not mean 'imprisons,' but has here the sense of *finire* (l. 1004) or *dissaepire* (l. 1005): the meaning is that, where void leaves off, body begins.

516. *material concilium* is the organised sum of atoms in a *res*.

517. *inane rerum*, 'the void belonging to created things': that all *res* contain *inane* was shown ll. 346 foll. This phrase does not occur again and has been suspected.

518, 519. Two disconcerting lines. We expect *Lucr.* to say: 'Therefore atoms are solid'; what he does say is: 'Therefore atoms may be indestructible.' Giussani ejects the lines, saying truly that they anticipate what is said in ll. 538, 539.

519. *cetera*, i.e. iron, rocks, gold etc. (ll. 490 foll.), which all contain void and therefore can be broken up.

520-527. Another obscure passage. It appears at first sight to be a third argument for *soliditas*. But l. 528 does not begin with the usual signpost, the *praeterea* or *denique* which tells us that a new argument begins there. Therefore it seems better to explain that *Lucr.* begins with *tum porro* his first argument for *aeternitas*, and that these lines are merely introductory to that. But the course of reasoning is confused and misleading.

520. *uocaret*, retained by Lachmann, is the older spelling of *uacaret*. But I have a suspicion that *inane uocamus* of l. 507 and elsewhere may be the cause of the spelling given here by Q.

521. *omne*, 'the universe': τὸ πᾶν of Epicurus.

*certa*, ὠρισμένα, 'definite,' i.e. of limited dimensions.

522. *tenerent*, 'they occupy': the mood is due to attraction of the preceding subjunctive.

523. *omne quod est spatium* = *omne*, 'the universe': see n. to l. 969.

524. 'Therefore assuredly body is marked off from void <and void from body> in alternate layers.'

*alternis*, adv., shows that after *corpus inani* we must understand *et inane corpore*.

525. *nauiter* (adv. of *nauus*) = *prorsus*.

The subject of the verb is *omne quod est spatium* understood.

527. **pleno**: abl. of a noun *plenum*.

**distinguere**, 'to vary.'

**inane**, here an adj., is elsewhere in Lucr. a noun.

528. The *aeternitas* of atoms is now stated, and two proofs given (532-539 and 540-550).

Lucr. conceives that things are destroyed in either of two ways, either by assault from without, or by dissolution from within: cf. ll. 222, 223.

529. **retexi**, ἀναλύεσθαι, 'to have their fabric undone.'

531 offers another difficulty. To what previous passage does Lucr. refer? Some say, to l. 485; others to 518, 519. But the clearest statement of the matter begins with the very next line. Hence some commentators place ll. 532-539 after l. 519.

533.  **nec findi in bina secando**: a translation of ἄτομος, which he never uses. Cf. Epicurus (Usener *l.l.* p. 191) εἶρηται ἄτομος, ... ὅτι οὐ δύναται τμηθῆναι.

534. **manabile**, 'permeating': see n. to l. 11.

536. **quo...magis**: often in Lucr. followed by *tam magis* for *eo magis*.

537. **rebus** = enemies.

**penitus**, 'thoroughly.'

540. **praeterea** = secondly.

This second proof has served another purpose already (ll. 225-237) and is put briefly here.

541. **antehac** is here a spondee.

543. **supra**: i.e. ll. 149 foll.

546. **quo** = *ut in ea*.

**quaeque** = *res omnes*.

**supremo tempore**, 'at their last hour': he speaks as if all *res* were living things.

547. 'That there may be a constant supply of atoms for making new things' (not 'for making things new').

**suppeditet** has the sense of *suppetat*: cf. l. 1040.

548-550. The *pauci uersus*, in which Lucr. promised to prove two qualities of atoms (l. 499), apparently end here, and he now sums up.

But the reader will observe that a new term, *simplicitas*, appears here for the first time and is repeated below in ll. 574, 609, 612.

There is much difference of opinion here. Giussani considers *simplicitas* to be a third distinct quality of atoms, which was proved separately; if this be so, then something has been lost after l. 547, and these lines are the summing up of a missing proof. As against Giussani's view, it may be noted: (1) that in the final summary of the discussion in l. 627 *soliditas* and *aeternitas* appear alone, with no mention of *simplicitas*; (2) that *simplicitas* never occurs throughout the discussion without an epithet, either *solida* or *aeterna*.

Others maintain that *solida simplicitas* is a mere equivalent for *soliditas* which the metre will not admit.

But *simplicitas* is not merely a synonym of *soliditas*. For some philosophers, notably Anaxagoras and Empedocles, taught that the particles of matter were both 'solid' and eternal but yet infinitely divisible. In the view of Lucretius, *simplicitas* is a consequence of *soliditas*: because atoms are *solida* 'free from void,' therefore they are *simplicia*, 'one and indivisible' (cf. l. 533, ll. 609 foll.). It is mainly this latter quality of atoms that Lucr. is proving, from this point down to l. 634. There is undeniable obscurity in the transition, and for this Lucr. is apparently responsible.

549. *per aeuom*, 'through ages.'

551-564. *That atoms are indivisible is proved by the evidence of the senses. For each kind of animal is reproduced and comes to maturity at an age which remains constant for the species. But, because destruction is more rapid than construction, two consequences would follow, if atoms were divisible: (1) reproduction would cease altogether; and (2) the period of maturity of each kind would grow later and later.*

Lucr. conceives that the atoms into which a *res* is dissolved, are used for the creation of a fresh *res* in a later generation. But, because destruction is more rapid than reconstruction, the atoms, if infinitely divisible, will be suffering dissolution faster than nature can combine them. Thus each generation will start from smaller atoms than its predecessors, so that each new combination will take a longer time to complete.

552. *frangendis rebus*, 'to the divisibility of matter.'

*iam*, 'by this time.'

553. *usque* for *usque eo*.

*redacta*, 'reduced' in size.

*aeuo*: the infinite duration of time is essential to the argument.

554. 'That no thing, formed out of those atoms, could within a fixed time reach the perfect development of its being.'

555. **conceptum** = *compositum*, but suggests the live animal.

**ad auctum**: so Munro for *finis* of MSS.: this l. came last on p. 23 of the original MS., at the foot of the right-hand page: the genuine reading having perished through wear and tear of the page, *finis*, which gives neither sense nor grammar, was inserted from the context: see ll. 561, 577, 584.

557. **dies et**: so Madvig for *diei* of MSS.: cf. l. 233. There is no other example in Lucr. of *et* ending a line; but the complication of the double genitive seems equally unexampled. Munro, who keeps *diei*, translates thus: 'the long, the infinite duration of all bygone time'; which takes no account of *diei*.

559. **fregisset**: the subjunctive is due to the attraction of *posset*: cf. l. 522.

560. **relicuo**: cf. iii 648, iv 976. The convenient form *reliquus* (~ ~) is used only by the post-Augustan poets: in Plautus the scansion is *relicūus*: Lucr. lengthens the first syll. (as in *religio*) and so can use it in his verse. Virgil, Horace, and Ovid never use the word, prevented by the three short syllables with which it begins.

**reparari**, 'be reproduced.'

562. **refici**, 'is repeated.'

**rem quamque**, 'each kind of creature.'

563. 'And also that definite periods are fixed for creatures according to their kind....'

For example, all horses come to maturity in three years. The reason is that the atoms, which form the starting-point for the making of a new horse, remain for ever identical. If the atoms could grow smaller, each new generation of horses would take longer to come to maturity.

565-576. *If it is true that atoms are perfectly solid, it is nevertheless possible to explain the existence of soft res by the presence of void in them; but, if atoms are soft, it is impossible to explain the existence of hard res such as iron and stone.*

This seems to me to be an argument for *soliditas* and not for indivisibility: in l. 574 the emphasis may fall on *solida*. Giussani, however, differs: he explains *mollia* in l. 570 as = *fragilia*, i.e. divisible. But where else in Lucr. has *mollis* this meaning?

565. **huc accedit, uti** = secondly.

566. **cum constant**, 'while the atoms are...': for this archaic constr., cf. l. 726: Cicero would write *cum constant*: and Lucr. himself has subj. in l. 519.

**reddi** = *expediri*, 'to be explained,' 'accounted for': cf. ii 178 *ausim* | *confirmare aliisque ex rebus reddere multis*. Epicurus used ἀποδοθῆναι in this sense.

567. **fiunt**, 'are formed.'

**uapores**, lit. 'heats,' = *ignis*. These are the four elements out of which Empedocles held that matter was formed. Lucr. here says in effect to Empedocles: 'With my atoms and void I can account for your four elements; with your four elements you cannot account for such substances as stone and iron.'

568. **quaeque**, 'each of them.'

571. **unde**, 'out of what.'

572. **non poterit ratio reddi**, 'an explanation cannot be given': cf. *reddi* above.

**funditus** goes with *carebit*, **omnis** with *natura*, 'their whole nature' (Munro); but perhaps 'all nature' is better.

573. **principio fundamenti**, 'a starting-point of solidity': cf. l. 339 *principium cedendi*.

574. **sunt**: sc. *primordia*.

576. **artari**, 'be closely massed': cf. *arte* l. 610.

577-583. *If it be granted that atoms are divisible, still we can only explain the actual existence of matter by means of indestructible particles of some kind. But it is impossible to believe that any particles, if divisible, could defy the destructive power of infinite time.*

This third argument begins with words almost identical with those used in l. 551. The arguments are closely related. Hence Giussani places ll. 577-583 after l. 564. The reasons for transposition are strong; but so much here is uncertain that I leave the lines where they stand.

577. **si** has the sense of *etsi*: 'even if' we grant the infinite divisibility of matter.

578. **quaeque...corpora** = *cuique rei sua corpora*.

579. **superare** has the sense of *superesse*: cf. l. 790. **corpora**, 'material particles.'

580. **lueant** = *sint*.



581. **quoniam**, 'since' on the hypothesis which *Lucretius* denies.  
**fragili** = *quae potest frangi*, 'divisible.'

**constant** = *sunt*.

582. **discrepat**, *μάχεται*, 'it is inconsistent' with the hypothesis in question.

**manere**, 'to continue to exist.'

584-598. *The regularity, with which birds of the same species present the same markings, and the offspring of all animals repeat the habits of their parents, is a proof that the atoms, out of which each kind of creature is made, are unchangeable.*

Proof is now given that atoms are unchangeable, *immutabilia*, *ἀμετάβλητα* in the language of *Epicurus*.

585. **rebus**, 'creatures' here. Each kind grows to a certain size and lives for a certain period; and these laws, by which they and all other created things are governed, were laid down (*sancitum*) by Nature at the beginning and can never be broken.

586. **foedera naturai**: again ii 302, v 310: and the same laws are called *fati foedera* ii 254, and *aeui leges* (eternal laws) v 58.

587. **exstat** = *est*.

The ending of this l. is exceptionally harsh in rhythm.

588. **quin—ut**, 'nay all things are invariable, to such a degree that...': for **constant**, cf. l. 165.

589. **uariae**, either 'different,' or 'of different colours' (*ποικιλαι*).  
**in ordine**, 'one after another.'

590. **generalis**, 'common to their kind.'

591. The apodosis begins here.

**immutabili**': this elision is rare except in the fifth foot of the verse: but cf. l. 978.

**quoque** goes with *materiae* (atoms).

592. **debent**: the subject is *uolucres*.

Thus variation of species is denied by *Lucretius*; yet he had a clear notion of natural selection: cf. v 855-877.

594. **quid possit—haerens**: repeated from l. 75 foll.

We now learn that the immutability of natural law is due to the immutability of the atom.

597. **saecla**: see n. to l. 20.

598. **motus**: e.g. all ducklings take to the water, but all chickens run about on land.

599-634. *We infer that the atom has parts, (1) from the analogy of other corpora. The nature of these parts is an additional proof that the atom itself is indivisible. The existence of these parts is further necessary, because (2) otherwise, infinities being equal, the universe would be equal to the smallest object it contains; (3) without these parts, atoms would not possess those properties which are indispensable for the making of res.*

We now learn that there are not two but four gradations of *corpus*: (1) *res*, e.g. a house or a man; (2) *rei cacumen*, the smallest part of a *res* which our eyes can grasp; (3) the atom; (4) the *cacumen* of the atom, also called *minima pars*, which is the subject of this paragraph. The first two are perceptible by the senses (*αἰσθητά*); the last two only by the reason (*θεωρητά*).

It would be natural to suppose that an object consisting of parts can be divided into those parts. It is characteristic of Lucr. to carry the war into the enemy's country, by insisting that the nature of these parts is a fresh proof of the indivisibility of the atom.

599-601. Munro did a great service here for the text of Lucretius. Guided by ll. 749-752 and by a text of Epicurus (*ταύτη τῇ ἀναλογίᾳ νομιστέον καὶ τὸ ἐν τῇ ἀτόμῳ ἐλάχιστον κεχρῆσθαι*, 'we must suppose that the *minimum* in the atom follows this analogy' of the *minimum* in visible things), he divined that some lines had been lost owing to similar endings, and suggested the supplement here printed in italics.

599. **quodque**, 'in each case': cf. l. 578: the full phrase would be *sunt sua cacumina quibusque corporibus*.

**cacumen**, *πέρας*, 'bounding-point': the term is misleading, because it suggests the 'top' of an object; whereas both *res* and atoms consist entirely of *cacumina*. See n. to ll. 749, 750.

600. **corporis**, i.e. the invisible atom.

601. **iam nequeunt**, 'cannot include' in their vision: an idiomatic *iam*: cf. Cic. *De Fin.* v 14 *Hieronimum, quem iam cur Peripateticum appellem nescio* (why I should include him in the list). In these and similar cases, the literal translation, 'no longer,' is bad English.

**id**, i.e. the *cacumen* or part of the atom.

These parts are mentioned in only one other place in the poem—ii 485 *fac enim minimis e partibus esse | corpora prima tribus, uel paulo pluribus auge*. Convinced that *some* parts were necessary,

Epicurus was willing to concede that the number of parts was very small.

**exstat** = *est*.

602. **minima constat natura**, 'is a minimum': *minimum* is here a technical term, denoting 'ultimate least thing in nature.'

**nec fuit**, 'and has not existed.'

604. 'Since it is essentially (*ipsum*) a primary part and a single part of the other thing,' i.e. of the atom.

*ipsum* = *per se*.

606. **agmine condenso**, 'in serried ranks': not a mere metaphor: the atom contains no void.

**naturam corporis**, 'the atom.'

The language seems to suggest more than three parts, in spite of the passage quoted above.

608. **haerere**: sc. *ibi*.

609-612. It will be found convenient to translate *primordia* here by 'the atom,' the plur. being reserved for its parts.

610. 'It is massed together and coheres closely by means of its least parts.'

**artē**: adv.

611. Lucr. here rules out a heresy, much in the manner of the Athanasian creed: *primordia* meet in *concilium* to make a *res*; but it must not be supposed that an atom itself is formed by the assemblage (**conuentu**) of its parts.

612. **magis** = *potius*: cf. l. 481.

613. **unde**, 'from it,' i.e. the atom.

**iam**, 'further.'

615. **praeterea** introduces a second argument for the existence of these parts, the first having been drawn from analogy; the second is a *reductio ad absurdum*.

**paruissima quaeque**, 'all very small bodies': this superlative is used by Lucr. elsewhere, e.g. iii 199: here it differs in sense from the technical *minimum*.

617. **quippe ubi**, 'since in that case': cf. l. 242.

**pars**, i.e. *dimidia pars*.

618. **nec res ulla** = *et nil*.

**praefiniet**, 'will put an end to the division.'

619. **rerum summam**, 'the universe.'

**minimam** (*rem* supplied from *rerum*) = *paruissimam rem*: if Lucr. had meant the part of the atom, he would have written *minimum*.

**quid escit** would be *quid intererit* in prose: *esco* is an inceptive form of *sum*, so that its present can be future in meaning.

620. **nil erit ut distet**: lit. 'it will turn out that there is no difference': a periphrasis for *nil distabit*.

**funditus**, 'absolutely.'

622. The absurdity depends on the assumption, that all infinites are equal. To Lucr. this is so obvious, that he does not even state it; Newton corrects him, saying that 'infinites are neither equal nor unequal, nor have any certain difference or proportion one to another.'

623. **quod**, 'but': cf. l. 82: if it were governed by *reclamat*, *cui* would be required.

**ratio uera**, 'logic': cf. ll. 51, 498: in each place the sense is different.

625. **iam** means 'when you come to them.'

**exstent** = *sint*.

627. **illa quoque**, 'the atoms also' as well as their parts.

**solida atque aeterna**: here Lucr. returns to the two qualities of which he spoke in l. 500.

628. **denique**, 'thirdly,' introduces a third proof that the atom must have parts.

**minimas in partis**, i.e. into the *cacumina* of the atom: *res* are broken up into atoms; but there the breaking stops.

630. **eadem**: fem. sing.: 'Nature too would no longer be able to make any new thing out of those parts.'

632. **ea**, 'those properties.'

**genitalis** = *ut res gignere possit*.

633. The motion of atoms, their 'entanglements, weights, blows, and clashings' are discussed in Book ii.

634. **motus**, placed last, is the emphatic word. All creation is due to the inherent motion by which the atom swerves from the perpendicular, as described in Book ii 216 foll. Aristotle had laid down that a thing without parts cannot have inherent motion; and for this reason, apparently, Epicurus determined that his atoms, though indivisible, must have parts.

635-920 form the polemical section of the book. Lucretius here seeks to disprove certain rival theories of the composition of matter maintained by other philosophers: these are (1) Heraclitus; (2) Empedocles; (3) Anaxagoras. Of these the first is treated most severely, because Heraclitus was to the Stoics what Democritus was to the Epicureans—the originator of their physical science, and the contest between the two schools was still keen in the time of Lucretius. In speaking of Empedocles, on the other hand, Lucretius uses the language of reverence and even of affection.

635-644. *Therefore those who have held that all things are formed out of fire, are widely mistaken. The chief of these is Heraclitus, whose fame is mainly due to his oracular style.*

635. **quapropter**, 'for this reason,' that Lucretius has proved the elements of matter to be atoms.

**materiem rerum**, 'the primary substance' or ἀρχή, out of which all things are made.

636. **summam**, 'the universe,' i.e. everything contained in the universe.

637. **lapsi...uidentur**, 'have evidently strayed.'

638. Heraclitus of Ephesus, the greatest of the Ionian philosophers, was born about 500 B.C. Of his treatise Περὶ Φύσεως only fragments are preserved. Both Socrates and Cicero complained of his obscurity; and there is still a great dispute as to the nature of his primordial fire.

**init proelia primus**: this only means that Lucretius is going to attack him before anyone else.

639. **clarus—linguam**, 'whose fame is bright because of his dark sayings': he was known as ὁ σκοτεινός for this reason.

**inanis**, 'frivolous.'

640. **quamde**: an old form of *quam*.

641. **stolidi**, 'fools': a retort aimed at the Stoics, who applied this epithet to all mankind except their ideal Sage (*sapiens*).

642. **inuersis...uerbis**, 'symbolic language': cf. Quint. viii 6, 44 ἀλληγορία, *quam inuersionem interpretantur, aliud uerbis, aliud sensu ostendit*. The fragments of Heraclitus are full of such language: e.g. he expressed the constant process of change in things by the words πάντα ῥεῖ. Epicurus, on the contrary, insisted that words should be used in their simple sense: ἀνάγκη τὸ πρῶτον

ἐννόημα (the simple sense) καθ' ἑκαστον φθόγγον βλέπεσθαι (Usener *l. l.* p. 5).

643. **tangere**, 'to tickle.'

644. **fucata sonore**, lit., 'coloured with sound': a mixture of metaphors surprising in Lucr.: it seems probable that he is mocking the figurative style of Heraclitus.

645-689. *The immense variety of visible things is inconsistent with the view that they are all alike made of fire. For (1) if the particles of fire retain their heat, anything made out of them would be more or less hot; (observe also that condensation and rarefaction of fiery particles is possible only if void exists, which is denied by these thinkers); and (2) if the fiery particles do not retain their heat, they merely cease to exist and can produce nothing. The fact is that there are certain material and unchangeable particles, not made of fire themselves, which by virtue of their combination make fire, and can, by a different method of combination, make other things, though they do not possess the sensible qualities possessed by the things they make.*

647. It will not help them, says Lucr., to maintain that hot things are made of fiery particles closely packed, and cold things of fiery particles loosely packed.

649. **naturam**, 'character,' i.e. hotness.

**super**, 'as well': an adv. often used by Lucr.: the word belongs to *haberent* and is misplaced here.

651. **disque sipatis**: for the tmesis made necessary by the metre, cf. l. 452.

653. **talibus in causis**, 'where the conditions are such': this idiomatic use of *in*, common in all the best writers, cannot be translated literally.

**uariantia**, 'diversity,' is a word coined by Lucr. to take the place of the unmetrical *uāriētās*.

655-664 is a parenthesis, in which the argument of ll. 396, 397 is more fully stated.

655. **id quoque**=*praeterea*: not used again by Lucr., but the phrase occurs in Plautus and at least once in Ovid, *Trist.* v 3, 53, where *idque ita* is a needless emendation.

**faciant**, 'they were to assume': cf. l. 667: the subject of this and the following verbs is *qui materiem rerum esse putarunt | ignem* (l. 635), i.e. the followers of Heraclitus.

**admixtum rebus**: see n. to l. 369. The Stoics admitted the existence of void outside the world, but denied void within it.

657. **nasci**, 'arise': so Munro for *musae* and *mu* of MSS.: the word came last on p. 27 of the archetype and was therefore specially liable to injury: see n. to l. 554.

*musae* is kept by Ernout and explained by a reference to Diog. Laert. ix 1, 12, where it is said that some called Heracleitus's book by this name. But neither this passage, nor Plato *Soph.* 242 D, proves that *Μοῦσαι* was the recognised title of the work. Also, it seems impossible that *cernunt* here should have a subject different from that of *faciant* above and the following verbs.

Lachmann's note shows that he anticipated and rejected this explanation.

658, 659 have been transposed in the text: I feel that 659 expresses a result rather than a cause.

658. **ardua...uia**, 'the steep road,' **uera uia**, 'the right road': cf. l. 315 *strata uiarum*.

660. **rursum**, 'on the other hand.'

**cernunt** here refers to *cernunt* of l. 657.

**exempto rebus**: see n. to l. 369.

662. **mittere**, 'to discharge.'

663. In the view of Lucr., light and heat (*uapor*) are merely diffused particles of fire.

665. A second conceivable explanation is now refuted.

**alia ratione**, 'by another process of reasoning': this belongs to *credunt*, not to *stingui*.

666. **ignis**, i.e. the particles of fire.

**in coetu**, i.e. when they meet to make a *res*, *coetus* being used in the sense of *concilium*: cf. l. 772. For *coetus* in this sense, cf. ll. 1017, 1026 etc.

Lucr. is applying the technical terms of his own theory to the theory of Heracleitus.

**stingui**: not metaphorical here, as in l. 486.

**corpus** here = *naturam*, 'their characteristic' of heat.

667. 'You must know, if they shall not refrain from asserting this at every point,' i.e. if they assert that this takes place invariably.

**reparcent** = *parcent*: the subject is the same as that of *faciant* in l. 655. Some supply *ignes* as subject.

669. But we know already that out of nothing nothing can be produced.

670. 'For, whenever a thing changes and quits its proper limits, at once this change is the death of that which was before': i.e. a thing is what it is in virtue of certain characteristics (*fines*) which make it what it is: if it loses these characteristics, it ceases to exist.

Lucr. evidently attaches great importance to this dogma which he repeats thrice (l. 792, ii 753, iii 519). No doubt he found it in Epicurus. It states the main result of the Eleatic philosophy, and denies the transformation theories of the Ionic philosophers, who believed that the ἀρχή or primary substance of matter could be transformed, e.g. that fire might be the ἀρχή and yet could, by transformation, produce water. The Eleatics asserted the immutability of substance.

671. **hoc**: note that this is not the antecedent of *quodcumque* above.

672. **superare** = *superesse*: cf. l. 579.

**ollis** refers either to *ignis* (l. 666), or to *quaecumque creantur* (l. 669). The form *ollis* is often used at the end of a line by Lucr. for dat. pl. of *ille*: Virgil seems to use only *olli*, dat. sing.

673. **funditus** qualifies *omnes*.

674. **copia** = the usual *summa*.

675. **nunc**, 'in fact.'

677. **abitu aut aditu**: other passages show that some only of the atoms depart and some others are added, in each case.

678. **corpora** = *res*, and are quite different from *corpora* in ll. 675,

679. Lucr. is indifferent to such ambiguities, but he would probably have avoided them in writing prose.

679. **ignea** is the predicate.

680. **nil rēferret**, 'it would make no difference': cf. l. 965.

**quaedam**, 'some atoms.'

683. **omnimodis**, adv., belongs to *foret*.

684. **itast**, 'the fact is this.'

686. **mutant naturam**, 'change the thing they make': for this sense of *natura*, cf. l. 457.

Do not impute to Lucr. the statement that atoms change their nature: cf. l. 676.

687. **simulata** = *similia*.

688. **praeterea** = *alii*, 'other.'



689. **tactus** represents 'sense of touch': see n. to l. 303.

All senses are considered as forms of touch. Lucr. explains (iv 46 foll.) that all *res* are continually discharging films (*simulacra*, = *corpora* of l. 688) from their surface; these films strike upon our organs of sense and so produce sensation. But atoms, because they contain no void, are incapable of discharging films.

690-704. *The dogma that nothing exists except fire is mere folly, and defies the evidence of our senses. The senses are our only test of truth, and they tell us of the existence of other things just as clearly. Why should fire be chosen out in preference to any other perceptible thing?*

Having attacked Heraclitus for his theory of the composition of matter, Lucr. now attacks his theory of perception, and charges him with inconsistency.

691. **in numero rerum** = *in rebus*: cf. l. 270. The repetition, *re. rem, rerum*, is characteristic.

**constare** is either = *esse*, or means 'remains unchanged,' as in l. 165.

692. **facit**: cf. l. 655.

**perdelirum**, 'sheer madness': not found elsewhere.

693. Heraclitus accepts the evidence of the senses in the case of fire, but rejects it in the case of all other qualities perceptible to the senses: thus he is inconsistent.

**ab sensibus**, 'while defending the senses' in the case of fire: cf. Cic. *De Inuent.* i 4 *a mendacio contra uerum stare* (to defend falsehood against truth): this use of *ab* is commonest in the language of the law-courts.

694. Following Epicurus, Lucr. repeatedly asserts that the senses are the only court of appeal, and sensation the only guarantee of reality: cf. ll. 423 foll., and esp. iv 379-521. For Epicurus, cf. Usener *l. l.* p. 5 *κατὰ τὰς αἰσθήσεις δεῖ πάντα τηρεῖν*; Cic. *De Fin.* i 22 (of Epicurus) *iudicia rerum in sensibus poni*.

But Heraclitus distrusted sense-knowledge: he said, *κακοὶ μάρτυρες ἀνθρώποισι ὀφθαλμοὶ καὶ ὠτα*, and again, *διὰ τούτων* (i.e. the senses) *γνώσις ἀνθρώποισιν ἀγνωσίη*.

**unde...pendent**, 'on which all our beliefs depend': *unde* = *a quibus*.

696. **cognoscere uere**, 'have a true perception of...'

697. **cetera**: supply *sensus cognoscere uere*.

698. **uanum**, 'untrue': here, as often, an exact synonym of *falsum*.

699. **quo**, 'to what standard': cf. l. 424.

700. **qui**: abl.

701. **tollat**, 'abolish,' i.e. 'deny the existence of...'

702. **ardoris naturam** = *ardorem*: see n. to l. 419.

703. **esse relinquat**, 'admit the existence of...': for the sense of *relinquere*, cf. l. 515.

705-733. *There is no truth in the view that any one of the four elements, fire, air, earth, and water, is the primary substance. Those are equally far from the truth, who couple air with fire or earth with water, or who maintain that all the four elements are primary. The chief champion of the last view is Empedocles, the greatest glory of the famous island of Sicily, and a poet almost divine.*

705, 706 repeat 635, 636, differing only in the last word.

707. **aera**: this was the ἀρχή adopted by Anaximenes, as water (*umorem*) had been adopted by Thales (B.C. 640-550). Lucr. inverts the historical order of the three philosophers.

710. **rerum naturas** = *res*. **uertier**: see n. to l. 207.

712. **adde** = and also: again iii 1037.

**conduplicant p. r.**, 'take two elements for their basis of matter.'

714. **rebus**, 'elements.'

715 **anima** is an alias for *aere*, **imbri** for *aqua*.

716. **quorum** goes with *cum primis*: others maintained this theory as well as Empedocles.

Empedocles of Agrigentum (b. 500 B.C.) wrote two scientific poems, *Περὶ Φύσεως* and *Καθαρμοί*, of which nearly 400 verses are extant; and Lucr. here expresses his gratitude to one who had expounded in hexameter verse a theory not differing widely from his own. He plainly ranked him high among the *graves Graii qui uera requirunt*.

717. **triquetris**: so Horace (*Sat.* ii 6, 55) calls Sicily, whose real name is inadmissible in dactylic verse, *triquetra tellus*. Virgil takes refuge in *Trīnacrīa*, Ovid in *Trīnacrīs*.

**terrarum oris** is no more than *finibus*: again l. 721.

719. **uirus**, 'the brine.'

720. **angusto fretu rapidum**, 'racing in its narrow channel,' i.e. the Straits of Messina.

For *frētus*, -ūs, m., cf. vi 364.

**undis** ends two successive lines: this seems permissible in Lucr., though some editors have recourse to emendation.

721. **eius** should be *cuius*, but a demonstrative pron. is substituted for a second relative: there are many instances of this constr. in Lucr., e.g. l. 686 (where *quae* as subject of *mutant* would be regular), l. 154, l. 850.

722. **uasta**, 'waste': see n. to l. 115.

723. **murmura**, 'rumblings': this word always denotes an inarticulate noise, not necessarily a subdued noise.

**colligere**, 'are nursing.'

724. **eruptos**: *erumpere* is often active in Lucr.

**iterum**, 'once more,' not 'a second time.'

726. **cum**, 'while,' followed by indicative: see n. to l. 566.

727. **uisenda**, 'worth visiting.'

728. Sicily is (1) fertile, (2) populous.

731. **pectoris**, 'genius.'

Lucr. speaks of these poems with special emphasis, because he had found them, though inadequate scientifically, of service as models to himself.

734-762. *Empedocles was far greater than his predecessors, who themselves did much more to discover truth than the oracle of Delphi. But he and they alike failed utterly to explain the composition of matter. Their errors are four: (1) they deny void; (2) they maintain the infinite divisibility of matter; (3) their particles are soft and therefore liable to destruction; (4) their particles are mutually destructive and therefore unable to combine.*

734. **inferiores**, than Empedocles.

735. **partibus egregie multis**, 'immensely,' seems to be equivalent to *omnibus partibus*, for which see Madvig on Cic. *De Fin.* ii 108. Lucr. has *multis partibus mobilior* iv 342.

738, 739 are repeated v 111, 112.

**certā magis** is used for the unmetrical *certiore*.

740. **tamen** answers to *quamquam* l. 736.

**fecere ruinas**, 'have come crashing down': cf. Cic. *De Fin.* i 18 *illae Epicuri propriae ruinae* (the capital error which follows is peculiar to Epicurus): the phrase is peculiar and may be taken from this line of Lucr.: see n. to l. 74.

741. **magni magno...casu**, 'great men were they, and great was their fall': an echo of Hom. *Il.* xvi 776 κείτο μέγας μεγαλωστί.

**ibi**, = *in principiis*, is emphatic.

742-5. Their first error is twofold: (1) while believing in motion, they deny void outside *res*; (2) while admitting that some *res* are soft, they deny void inside *res*.

742. **rebus** = *rerum numero*, 'the universe': see n. to l. 330. For the impossibility of motion without void, cf. ll. 335-345.

743. **constituunt**, 'they allow.'

**raras**, 'porous.'

744. **rorem**: *solem* MSS.: but the sun does not seem a good instance of something soft and porous; also, of the four elements of Empedocles one (water) is omitted, while fire is represented twice over. For these reasons Christ's emendation is accepted.

For **rorem** = *aquam*, cf. ll. 771, 777.

746. Their second error also is twofold: these philosophers deny (1) the indivisible atom; (2) the least parts of which the atom is composed.

747. **fragori** = *frangendo*, 'the process of division.'

748. **prorsum** = *omnino*.

**in rebus** = *in rerum numero*.

749-752. 'Though we see that the extremity of anything is that which, judged by our senses, is seen to be the *minimum*' (i.e. the least perceptible thing in nature); 'hence you can infer that, since things which you cannot see' (i.e. atoms) 'have an extremity, there is a *minimum* in them also.'

For this *extremum* = *minimum* = *cacumen*, see nn. before l. 599 and to l. 599.

750. **uidetur**, 'is seen,' not 'seems': there is no deception in the matter: the *cacumen* of a *res* really is a *minimum* in the visible sphere, and the *cacumen* of an atom is a *minimum* in the invisible world grasped by thought alone.

(Giussani argues that the *cacumina* of a *res* denote the smallest particles which retain the properties of the substance: e.g. the *cacumina* of milk are white and sweet; but any further division reduces them to atoms which are neither white nor sweet.)

752. **quod** is taken above as = *quoniam*: it is possible that it may be a relative pron. governed by *habent*.

753. **huc accedit item** = thirdly.

754. **natiua**, 'to have birth,' = *mortalia*: see n. to l. 113. We have seen that the atoms of Lucretius are both *solida* and *aeterna*.

755. **utqui**, after *accedit*: also ii 17, iii 738, and (by conjecture) ii 428. The word is common in Plautus (e.g. *Capt.* 553, *Trin.* 637): it means no more than *ut*: cf. *at* and *atqui*: the abl. of the pronoun has become a mere enclitic conjunction or adverb like  $\pi\acute{\omega}\varsigma$  in Greek.

756. **iam**, 'in that case.'

758. **iam** belongs to *habebis*: 'you will understand already' from the proof given in ll. 159-264.

759. **deinde** = fourthly.

As subject of **sunt**, supply *illorum primordia*.

**ueneno**, 'poisonous,' i.e. fatal: predicative dat.

760. **congressa**, 'when they meet,' in the endeavour to make a *res*: cf. l. 666.

761. **tempestate coacta**, 'when a storm has gathered': the verb implies the packing of thunder-clouds.

762. Note that this is not a mere illustration but an argument as well: in a thunderstorm we see that three of the four elements, represented by the lightning, the rain, and the wind, do actually refuse to coalesce.

763-781. *The four elements, on this theory, are too much akin to the things they make, and are constantly being transformed into them, and back again. It may be maintained that these elements retain their characteristics: if so, they cannot unite to make anything. The particles which form the basis of matter must not be either hot or cold, if they are to make both hot and cold things.*

After refuting the Ionic philosophers in general, Lucretius now comes to close quarters with the theory of four primary elements, and he distinguishes two forms of it: (1) the form in which the elements undergo change; (2) the form in which the elements remain unchanged. The second is the theory of Empedocles.

763. **rebus**, 'elements' here and l. 764, but 'products of the elements' in ll. 765, 766: the ambiguity here is specially awkward: is it possible that Lucretius intended to show by this means the importance of a proper distinction between *res* and *primordia*, and to illustrate the confusion caused by the absence of such a distinction? But one cannot be sure of this, because ambiguity is so common in the poem.

765, 766. 'Why should the elements be called the basis of matter, any more than matter the basis of the elements, the supposition being reversed?'

**res illorum**, sc. *primordia dici*.

Giussani says that this argument is unsound and might be directed against the atoms of Lucretius himself. He imitates it thus: 'if houses are made of bricks and can be broken up into bricks, you might as well say that bricks are made of houses, as that houses are made of bricks.' But these *primordia* are not merely put together like bricks: it is said just below that they constantly change their nature. The imitation seems therefore not to be justified.

767. **alternis**, 'turn about': adv.: cf. l. 524.

**gignuntur**: the subject, not expressed by Lucretius, is 'the elements and their products.'

**mutant inter se**, 'exchange': cf. l. 375.

**colorem**, 'quality.'

769. **naturam**, 'characteristics.'

**tempore ab omni**, 'from everlasting.'

770. The argument used against Heraclitus (ll. 647 foll.) is now repeated against Empedocles.

**ignis**: acc. plur.: cf. ll. 666, 686.

772. **nil** governs *eorum*.

774. **animans**: a noun: see n. to l. 4.

**exanimis cum corpore**, '<thing> with lifeless body.'

775. **quippe**, 'for.'

**in...acerui**, 'in the meeting of the discordant mass.'

776. **uidebitur**: passive.

779. 'Must bring to bear characteristics that are hidden and unobtrusive.'

Lucretius proves at length in Book ii (ll. 730 foll.) that atoms have no secondary qualities, neither colour nor temperature nor taste nor smell: the only qualities they possess are size, shape, and weight.

Note that **caecam** here does not mean 'invisible': the atoms are invisible, but the point here is different.

780. **emineat**, 'stick out,' 'be prominent.'

For example, if atoms were hot, then, when they met to produce ice, their hotness would be obtrusive and would prevent the ice so

formed from having the coldness of ice. But, as atoms are neither hot nor cold, it is not strange that they should make both fire and ice.

782-802. *The Stoics wrongly teach that the four elements are transmuted in a regular series into one another; but transmutation of this kind means destruction and not creation of anything. These changing elements must themselves be formed of unchangeable atoms, and these atoms, by change of arrangement and motion, can produce all the variety of matter.*

Lucr. has now done with Empedocles and assails the theory already denounced in ll. 763-769. The form of this theory which he selects is the *ὀδὸς ἀνω κάτω* of Heraclitus as developed by the Stoics, 'the ascending and descending series' in which the four elements pass into one another. To this hypothesis he opposes the argument which he has used already against the fire of Heraclitus.

782. **quin etiam**, 'still further': Giussani renders 'still worse': and there is no doubt that Lucr., who rejected the theory of Empedocles, that *res* are formed by the mixture of four elements, was even more opposed to the Stoic theory that one element is transformed into another.

**repetunt a**, 'they start with...': 'they' are the Stoics: cf. l. 655.

783. **faciunt**, 'maintain': cf. l. 692. Cicero often uses, of a philosophic tenet, *placet* governing a dat.

784. **imbrem = aquam**.

785. **retro**, 'in reverse order.'

787. **inter se mutare**: in phrases of this type, Latin idiom dispenses with *se* as object of the verb: e.g. *pueri inter se amant* (the boys love one another).

788. **mundi = caeli**.

This theory is stated by the Stoic Balbus in Cic. *De N. De.* ii 84 *cum quattuor genera sint corporum, uicissitudine eorum mundi* (the world) *continuata natura est; nam ex terra aqua, ex aqua oritur aer, ex aere aether (= ignis); deinde retrorsum uicissim ex aethere aer, inde aqua, ex aqua terra infima: sic naturis iis, ex quibus omnia constant, sursus deorsus, ultro citro commeantibus mundi partium coniunctio continetur*. And the Academic Cotta refutes the theory by using the same argument as Lucr.: *l.l.* iii 31 *omnia haec tum intereunt, cum in naturam aliam conuertuntur; quod fit, cum terra*

*in aquam se uertit et cum ex aqua oritur aer, ex aere aether, cumque eadem uicissim retro commeant.*

789. **haud ullo...pacto**, 'on no account.'

790, 791. Cf. ll. 672, 673.

792, 793 = 670, 671, where see nn.

794. **ante**: i.e. in ll. 783-786.

795. **commutatatum** = *commutationem*: no case of any noun in *-atio* could be used by Lucr. in his verse: it was fortunate that the *a* in *ratio* is short.

796. **conuertier**: see n. to l. 207.

797 = 673.

798. **quin...constituas**, 'why should you not suppose...': the verb is here followed by acc. and inf.: for a different constr., cf. l. 743.

**tali natura praedita** = *immutabilia*.

800. **eadem** = also.

801. **ordine** is their position in relation to one another.

**motu**: we learn in Book ii that all atoms, whether free in space or temporarily combining to make a *res*, never cease to move at an enormous speed. This movement is of great importance in determining the qualities of any *res*.

802. **sic** = *et sic*.

803-829. *It is true that growing plants need each of the four elements in some form, just as a man, if deprived of his appropriate food, would waste away and die. In both cases, the explanation is the same: there are atoms common to the food and the thing fed, and these are absorbed by the latter. Even if many atoms in any two res are the same, yet their arrangement and motion have great influence to determine the result produced by their union. The relation of letters to words illustrates the relation of atoms to res.*

The imaginary objector implies that, because the four elements are necessary to plants, therefore the plants are identical with the four elements. Lucr. admits the argument, but denies the conclusion. He says in effect: 'Let us examine the facts of nutrition generally. As plants need rain and sun, air and earth, to feed them, so animals feed on plants. This is possible, because there are atoms common to the rain and the plant, and also atoms common to the plant and the animal. In each case the common atoms are absorbed as food;



but in neither case is the thing fed identical with its food.' Lettuce, which feeds on rain, is not made of rain; a rabbit, which feeds on lettuce, is not made of lettuce.

See n. to l. 196, where the same argument is very briefly stated.

803. **manifesta...res**, 'plain facts': the objector adopts the Epicurean standpoint and appeals to the evidence of the senses: cf. l. 893.

804. **res** here are plants and trees.

805. **tempestatas**, 'the season.'

**indulget**, 'gives free play,' governs *imbribus*.

806. **tabe nimborum**, lit. 'by the melting of the clouds,' i.e. by the rain.

**arbusta** here and below = *arbores*.

807. **calorem** = *ignem*, the last of the four elements.

808. **fruges**, 'corn': so always in Lucretius.

**animantes** is irrelevant here, but is added as the last item of a familiar series: cf. l. 821.

809. **scilicet**, here and l. 901, = 'true': used again in this sense vi 674.

**aridus**, 'solid.'

810. **corpore**, 'flesh': cf. l. 1039.

812. **adiutamur**, 'we get support.'

813. **certis ab rebus**, 'from definite food': but **res** = 'creatures': for the confusion caused by different meanings of *res*, cf. l. 763 foll.

814-816. I.e. *A* can feed on *x*, because many kinds of atoms are common to both (**communia**), but not on *y*, because, although *A* and *y* may also have many kinds of atoms in common, the atoms of *y* are not, like the atoms of *x*, so arranged as to nourish *A*.

**multis, multarum** = *uariis, uariarum*.

815. **multarum** is governed by *communia*: for dat., cf. l. 824.

816. **sunt**: for the emphatic position, see n. to l. 24.

817. **magni refert**, 'it makes a great difference': cf. ll. 680, 965.

818. **cum quibus**, i.e. 'with what others': the atoms which form any two kinds of *res* are not absolutely identical: cf. l. 800.

**contineantur**, 'they are held in union.'

819. 'And what motions they mutually impart and receive': Lucretius is referring to the internal vibrations of atoms when combined: see n. to l. 801: the subject is treated in Book ii.

820. The list represents the four elements, *caelum* being = *aera*.

822. *aliis* goes with *commixta*, *alio modo* with *mouentur*.

823. *passim*, 'everywhere.'

Cf. ll. 197, 912 foll., and ii 688 where this passage is repeated with a supplement. Lucr. has a passion for this illustration which he may have found in writings of Epicurus, and which is perhaps older still. He says here: 'though the same letters recur constantly, yet my lines and words differ in sound and meaning; just so one *res* differs from another, although the two have many atoms in common.'

824. *elementa*, 'letters.'

825. *uersus*, 'lines' of either verse or prose.

*necesses*: *cum tamen* in Lucr. is generally followed by indic., not subj.

826. *re*, 'in meaning.'

*sonanti* can hardly be translated: the assonance with *sonitu* is of course intentional.

827. *elementa* = the atoms of language: *elementa* are to *uerba* what *primordia* are to *res*.

828. *plura*, lit. 'more things': we should say 'more combinations and permutations.'

The Latin alphabet has 23 letters. Hence we may infer that there are more than 23 varieties of atoms: Lucr. nowhere says how many there are—only that their number is limited, whereas the number of each kind is unlimited.

829. *unde* = *ex quibus*.

*uariæ res quæque*, 'the different kinds of things.'

830-858. *The theory of Anaxagoras, that each thing is made up of particles like itself, is open to the same objections as the theories already examined: (1) he denies the existence of void; (2) he maintains the infinite divisibility of matter; (3) his particles are as frail and perishable as the things they make.*

Anaxagoras, born at Clazomenae in 499 B.C., spent his manhood at Athens till he was banished for impiety in 434. He published his theory in a book of which only fragments are preserved. To the Platonic Socrates the interesting feature of the theory was, that Anaxagoras declared Mind (*νοῦς*) to be the universal cause (Plato *Phædo* 97-98 B); but Lucr., as a materialist, takes no notice of this, just as he ignored the metaphysical importance of Heracleitrus.

830. **homoeomerian**, lit. 'similarity of parts,' i.e. the theory that every *res* is composed of *primordia* possessing the qualities of the *res*: examples are given by Lucr. Anaxagoras, like Empedocles, taught that his particles, often called by him *σπέρματα*, were imperishable.

831. **Graei**: an Epic form, always used by Lucr. for *Graeci*.

832. **sermonis egestas**: see n. to l. 139: it is not exactly the poverty of Latin that is at fault here, but its inability to translate *ὁμοιομέρεια* by a single word: see n. to l. 3.

833. **ipsam rem**, 'the actual theory' as distinct from its name.

834 foll. The examples chosen are these: (1) three animal substances; (2) a metal; (3) three of the four elements.

The third class of examples misrepresents Anaxagoras, who taught that the four elements were not *ὁμοιομερῆ* but 'rubbish-heaps' akin to the original chaos, as it was before Mind brought it into order.

834. **principio**: no *deinde* follows in l. 843 where the second point is stated.

835. **uidelicet**, 'you must know.'

**pauillis** = *paruissimis*.

836. **hic**: pronoun: i.e. Anaxagoras.

837. **ulsceribus**: in Lucr. *uiscera* never means 'entrails,' but always 'flesh,' all that comes between the skin and bone: this is the regular meaning in early Latin: cf. Plaut. *Mil. Gl.* 30 *per corium per uiscera*, | *perque os elephantis transmineret brachium*.

839. **auri**: Bentley suggested *aurae* here and *auram* below, to complete the list of the four elements: but (1) Lucr. elsewhere (e.g. l. 853) omits one element from the list; (2) *mica* is a suitable word for a 'grain' of metal but not suitable for a 'particle' of air.

841. **ignibus ex**: this position of *ex* is common in Lucr.: he even ends a line (ii 791) and sentence with *uariis ex*.

842. *esse* must be supplied after **putat**: 'and all other things he imagines and supposes to exist in like manner.'

843, 844. Cf. ll. 742 foll.

**ulla ex parte**, 'anywhere.' **in rebus** = *in rerum numero*.

847. **adde quod** = thirdly.

848. **si...sunt** = if they deserve the name: 'I ought not to call them by that name,' he means: cf. l. 1057.

**constant** = *sunt*.

849. **res**, 'the things they make.'

850. **refrenat**: supply *ea* as object: for the constr., see n. to l. 721.

852. **dentibus**: death is compared to a devouring animal: no exact parallel is quoted.

853. **sanguen**: *sanguis* of MSS. cannot be right, because in Lucr. *sanguis* is a spondee.

854. **ubi** = *quoniam*.

**funditus**, 'essentially,' goes with *mortalis*.

857. **neque autem crescere** = *et ne crescere quidem*, 'and also cannot grow.'

858. The constr. is elliptical: 'I appeal to facts, <to show> that....'

**ante**: i.e. ll. 159-264.

859-874. *A dilemma will disprove this theory of Anaxagoras in any case you choose to select: e.g. (1) the nutrition of the human body; (2) the formation of trees and plants; (3) the ignition of wood.*

The dilemma may be stated thus: since our body grows from food, the particles of food must be either like the body and therefore unlike the food, or like the food and therefore different from the body: therefore either the food or the body is *ἀνομοιομερές*, i.e. composed of particles unlike itself.

The argument will be clearer, if the view of Lucr., that animals normally feed on plants, be kept in mind: think of an Irish labourer who turns potatoes into bone and muscle.

860. The l. in italics which follows is required by the sense and was supplied by Lambinus, without any intimation that he wrote it himself.

861. **commixto corpore**, 'of a mixed substance': but *corpora parua* below = particles.

**dicent**: the indefinite plural, which we have often had before, e.g. l. 655: it refers here to believers in *ὁμοιομέρεια*.

862. **esse**: see n. to l. 24.

863. **omnino**, 'to complete the list' (Munro).

864. **ipse**, taken with *cibus* (so Giussani) has much more point than if taken, as it used to be, with *liquor*.

865. **rebus**, 'substances.'

867. **praeterea** = secondly.

**corpora** here = *res*, i.e. trees and plants.

869. **alienigenis**, i.e. not particles of earth, but miniature trees and plants.

870. **transfer**, 'apply' the reasoning 'to other cases': *transfer* = *si transferes*.

871. A third application of the dilemma.

872. **alienigenis**, i.e. not particles of wood but particles of smoke and flame.

873 is rightly rejected by Giussani: for (1) it is a mere repetition of l. 867; (2) it serves to add a fourth to the previous examples; but the next paragraph proves that Lucr. limited himself to three examples.

875-896. *Anaxagoras, however, teaches that each thing contains, not only particles like itself but also particles of every other thing. But this is confuted by the evidence of our own eyes in each of the three instances; (1) animal nutrition; (2) the growth of plants; (3) the ignition of wood.*

Anaxagoras wrote, *ἐν παντί παντὸς μοῖρα ἔνεστι πλὴν νόου*. Mind alone was not present in matter. Thus every object in the universe is itself a kind of world in miniature. This doctrine, which Lucr. calls 'a loophole for evasion,' is really a cardinal point of the system, and explained the change of one substance into another, e.g. of bread into flesh and blood.

876. **sibi sumit**, 'avails himself of.'

877. **latitare** clearly echoes *latitandi* above: cf. l. 337.

878. **mixta**, 'in the mixture.'

879. **prima in fronte**, 'on the outer surface.'

881. Note that the three examples which follow are the same as those given in the last paragraph.

**conueniebat**, *εἰκὸς ἦν*, 'it would be natural,' if this hypothesis were true, that corn, which men eat in the shape of bread, should give, when ground, some indication of blood or some other component of the human body; and also that grass and water, the food and drink of sheep, should give some indication of their milk. But we see (l. 893) that this is not so.

**fruges**: see n. to l. 808.

883. **aliquid**: supply *eorum* as antecedent of *quae*.

'The things which have their nourishment in our body' are the *ossa, uenae, nerui* of l. 862 foll.

884. 'And that, when we grind it (i.e. *fruges*) between stone and stone, blood should flow freely.'

**lapidi in lapidem**, lit. 'with stone against stone.'

Two stages of grinding seem to be distinguished, the grain being first broken and then pulverised (so Giussani). Munro keeps *herbis* but transposes ll. 884, 885, and believes that in 884 Lucr. is referring to the food of sheep; but this is open to the objection that all the illustrations of Lucr. are taken from actual life, and no one ever does rub blades of grass between two stones.

The *lapides* are therefore the upper and lower millstones: cf. Plaut. *Asin.* 31 *num me illuc ducis ubi lapis lapidem terit?* i.e. *ad pistrinum*.

885. **herbas**, which sheep eat.

**decebat** = *conueniebat* above.

886. **latices**, 'water,' which sheep drink.

Note that *herbas et latices* correspond exactly to *cibus aridus et liquor* of l. 864.

887. The constr., awkward enough, is *mittere dulcis guttas et tali sapore, quali oues sunt lactis ubere*, 'should yield sweet drops, i.e. like in flavour to the udder of milk which sheep have.'

If *ubera* be read with Lambinus, *lanigeræ* is gen. or dat. sing.

For *lanigeræ* = *oues*, see n. to l. 372.

888. The second example begins here: cf. l. 867.

889. **uideri**, 'should be seen,' governed by *decebat*.

890. **minute**, 'in miniature.'

891. The third example begins here: cf. l. 871.

893. **manifesta**: cf. l. 188: Lucr. uses this word to translate *ἐναργής* of Epicurus: it means 'certainly true, because obvious to the senses.'

894. **rēs**, 'created things,' with perceptible qualities, as opposed to the invisible atom with no secondary qualities.

895. **semina**, 'atoms.' Cf. ll. 814, 815.

897-920. *Fire may be kindled by branches of trees rubbing together; but this does not prove the presence of fire in wood. Fire is due to a fresh distribution of the atoms composing the wood. If there were actual fire in wood, all forests would be burnt up at once.*

*The position and movement of atoms which are mainly identical make all the difference. Unless you admit the essential difference between res and primordia, you will reach absurd conclusions.*

Lucr. now expands the last example of the preceding paragraph.

897. *in magnis montibus*: cf. Thuc. ii 77, 4 ἤδη γὰρ ἐν ὄρεσιν ὕλη τριφθεῖσα ὑπ' ἀνέμων πρὸς αὐτὴν ἀπὸ ταυτομάτου πῦρ καὶ φλόγα ἀπ' αὐτοῦ ἀνήκε. We know that Lucr. had studied the work of Thucydides.

900. *flammae flore*: this metaphor is used in Greek and appears in the 'Red Flower' of the *Jungle Book*.

*fulserunt*, 'they blaze up,' seems to imitate the Greek aorist of final result: see n. to l. 496.

901. *scilicet*, 'true': cf. l. 809.

902. *semina ardoris*, 'atoms which make heat,' though not hot themselves.

*terendo*, 'by friction' of the boughs: for the constr. of the gerund, see n. to l. 312.

904. *facta flamma*, 'fully developed flame,' opposed to the atoms *ex quibus flamma fit*.

905. *celarier*: see n. to l. 207.

906. *arbusta* = *arbores*: see n. to l. 352.

907. 'Well, do you *now* perceive...?'

*ante*: i.e. ll. 817 foll.

911. *inter se mutata*, 'by shifting about.'

912. *ignis et lignum*, 'fires and a fir.' The similar sound of the two nouns suggested the addition of the favourite illustration: see n. to l. 823.

914. *cum*, 'though.'

*distincta uoce*, 'by two distinct names,' i.e. we mean two quite different things, though the names sound alike.

915-920. A *reductio ad absurdum* to this effect: 'if you say that hot things cannot be hot, unless they are formed of hot atoms, then you must say that a man, who laughs and weeps, cannot do so, unless each of his atoms can do the same.'

This playful argument, which has no special force against Anaxagoras, is stated at greater length in Book ii 973-990, where it is really relevant. It seems certain that Lucr., while writing Book ii, was struck by the thought that the same argument might

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serve here, and added these six lines: indeed ll. 919, 920 would hardly be intelligible without the full explanation given in Book ii. For similar insertions, see nn. to ll. 132, 146, 196, 205.

915. **quaecumque**, 'all the processes which...'

**rebus apertis**, 'visible things,' identical with *res genitae* of l. 511.

916. **feri**, 'take place.'

**quin fingas**, 'without your imagining...'

918. **pereunt**, 'are destroyed,' i.e. cease to be *primordia* at all.

919-920 are almost identical with ii 976, 977.

For the purpose of argument, it would be enough to say, *ridere et flere debebunt*; but the detail is added, to make the conclusion more grotesque.

921-950. *Listen to what remains. Dark as the subject is, I find joy in treating of matters which no poet has ever touched before. I deserve fame, because mankind will derive relief and freedom from my labours, and also because of my poetry. As a draught of bitter medicine is made palatable to children by smearing honey on the rim of the cup, so I try to make this obscure philosophy attractive by investing it with the charm of poetry.*

Lucr. has now ended the polemical part of his poem (ll. 635-920); and here, before returning to the exposition of his own system, he refreshes the reader with these beautiful verses.

921. **nunc age**: see n. to l. 265.

**quod superest**, 'what remains,' is the object of the imperatives.

**clarius**, 'more distinctly': the word is evidently referred to by *obscura* below.

922. **animi**: see n. to l. 136.

**obscura**: the plur. implies that the whole system, and not merely the part of it which comes next, is abstruse.

923. **thyrsos** = magic wand: desire of praise acts on the poet's mind as the thyrsus acts on the votary of Bacchus: for the metaphorical use, cf. Ovid *Trist.* iv 1, 43 *mota calent uiridi mea pectora thyrsos* (= poetic inspiration).

925. **instinctus**, 'inspired.'

**mente uigenti**, 'with eager thought.'

Lucr. draws a true portrait of himself here.

926-950 are repeated almost exactly as an exordium to Book iv



(ll. 1-25). Lachmann argued that the original editor found Book iv without an exordium and therefore prefixed these verses from Book i. But repetition is so common in Lucr., that he may fairly be supposed, on the principle of *dis kal tris ta kalá*, to have repeated the verses himself where they stand in Book iv.

The first lines were often imitated by Virgil and later poets: references are given by Munro.

926 foll. The claim of priority is asserted four times over; and it is true that Lucr. was a pioneer, because he expounded the Epicurean system in verse.

927. *luuat*, 'I love...'

929. *inde* = *ex eis locis*.

930. There is an ellipse after this line: < I deserve this garland > because etc.

931. *primum...*, *deinde*: thus Lucr. claims credit first for the new gospel which he proclaims, and sets his claims as a poet at a lower rate: see n. to l. 54.

The *et* clause explains what the *magnae res* are, i.e. the doctrines which free the mind from superstitious fears.

932. *religionum...nodis*: see n. to l. 65.

933. To Lucr. his poetry is of secondary importance: it is merely a means of making the philosophic system attractive, the jam, in fact, under which the powder is concealed.

934. *contingens*, here and below, is a compound of *tango*, not of *tingo* or *tinguo*.

*cuncta*: a pardonable exaggeration: there are many passages in the poem which cannot be said to possess charm (*lepor*); but nobility of thought and purity of expression pervade it all.

935. *non ab nulla ratione*, 'not without good reason': *ab* is difficult: perhaps it is akin to the *ab* of l. 693.

936. *medentes* = *medici*: participle used as noun.

937. *dare* and *διδόναι* are technical in this sense: from *δῶσις* comes our 'dose.'

*conantur* is expressive: to make a reluctant child swallow a dose of medicine is almost impossible.

*pocula*, 'the cup': the plur. is used for the sake of metre.

940 *tenus* always follows its case, which is either abl. sing. or gen. plur.

**interea**, 'in the meantime,' i.e. before they have found out the deception.

941. **absinthi**: gen. of *absinthium*.

**deceptaque non capiatur**, 'and, though deceived, be not betrayed': another instance of assonance: cf. l. 337.

943. **ratio**, 'system': cf. l. 51.

944. **tristior**, 'somewhat bitter,' with reference to the simile.

**quibus = eis a quibus**: the relative is attracted into the case of the antecedent.

945. Yet Cicero (*Tusc. Disp.* iv 6 and 7) states that the Epicurean system was excessively popular among the uneducated over all Italy. Giussani explains this contradiction, when he says that to every philosopher his own adherents seem too few, and the adherents of rival systems too many.

946. **carmine** has two epithets without copula; so has *melle* below: see n. to l. 258.

947. **musaeo**, 'of poetry.'

948. **ratione = pacto**: the different sense of *rationem* above apparently gave no offence to Lucr.

949. **dum**, 'until,' often followed by pres. ind. in the best writers.

Some translate *dum*, 'while': but the verb *perspicis* is against this.

950. 'How the whole universe has been shaped and framed.'

**compta**, lit. 'taken together,' from *co-emo*, is near in meaning to *composita*.

951-957. *Now that I have proved the existence of indestructible atoms moving through void, I must next discuss (1) whether these atoms are infinite in number; (2) whether this void is infinite in extent.*

951. **sed (or et) quoniam** often serves to mark a return to the main theme after a digression: e.g. iv 26; vi 43.

952. **uolitare**: in fact, Lucr. has not yet explained the motion of atoms: he does this at the beginning of Book ii.

**inuicta = aeterna**.

953. **nunc age**: see n. to l. 265.

954. **euoluamus**, 'let me explain.'

955. Cf. l. 472.

**seu** = 'or, if you like, you may call it...'

956. **funditus**, 'essentially,' qualifies *finitum*.

**omne** is an adj.

957. **constet** = *sit*.

**uaste profundum**, 'to a bottomless depth.'

958-1013. *The universe is boundless. For (1) there is nothing outside it, to bound it; every point in it alike is centre. (2) Supposing it to be limited, if a man were to stand at the verge and throw a spear, the weapon must either go on or stop short: in the former case, there is void, in the second, there is body, beyond the supposed limit: which proves that the universe is unlimited. (3) Suppose again that it is limited: in that case all atoms would have come to rest at the lowest point, and nothing visible would exist anywhere. Atoms, in fact, are in constant motion, because there is no lower limit to the universe. Therefore space extends to infinity. (4) Outside the universe there is nothing which can bound it, as the sea bounds the land. Nor can it set bounds to itself; for its two components, body and void, are such that their alternation must extend to infinity, unless one of the two by itself so extends.*

Before proving that body and void are each infinite, Lucr. first gives four proofs that both, taken together, are infinite.

The whole argument is more difficult to follow, because Lucr. uses so many names for the universe: he calls it *omne quod est* (l. 958), *summa* (l. 963), *omne* (l. 967), *omne quod est spatium* (l. 969), *spatium summai totius omne* (l. 984), *rerum summa* (l. 1008), *omnia* (l. 1011): by each of these seven names he means exactly the same thing.

The first proof is that given by Epicurus: cf. Usener *l.l.* p. 7: τὸ πᾶν (*omne*) ἄπειρόν ἐστι. τὸ γὰρ πεπερασμένον ἄκρον (*extremum*) ἔχει· τὸ δὲ ἄκρον παρ' ἑτέρων τι θεωρεῖται. 'The universe is infinite. For what is finite has an extremity, and the extremity of anything is discerned by comparison with something else.'

958. **omne quod est** = τὸ πᾶν, *quod est* acting as a substitute for the definite article: the gen., *omnis ut est*, occurred in l. 419.

**nulla regione uiarum**, 'in no direction of its paths'. Munro explains thus: 'take whichever of the roads through the universe you please, at no point in any of them will you reach its bound.'

*regio* is lit. 'a ruling': hence *e regione*, 'in accordance with a ruling,' = 'in a straight line.'

959. **extremum** = ἄκρον of Epicurus: the end or outside of anything limited.

**debebat**, 'it ought,' if it were limited.

961. **quod finiat**, 'something to bound it.'

**ut—sequatur**, 'so that that thing is seen, further than which our sense does not follow' (the thing bounded): e.g. we cease to see the ocean, as soon as we begin to see the shore: therefore the ocean is bounded by the shore.

This represents *παρ' ἑρεβὸν τι θεωρεῖται* of Epicurus.

962. **haec sensus natura** = *hic sensus*.

963. **nunc**, 'in fact': cf. l. 110.

**fatendum**: sc. *est*.

965. **rēfert**: cf. l. 908.

966. **usque adeo**, 'so invariably.'

967. **relinquit**: the subject is probably *quisque*, not *locus*.

968. **praeterea** = secondly.

**si iam**: see n. to l. 396.

969. **omne quod est spatium** = *omne*, the universe: this is proved by l. 975.

The phrase occurred in l. 523: it denotes the whole of space, including all atoms and *res* formed of atoms, which are included in space. It must be remembered that in the Epicurean conception of the universe empty space predominates immensely over space occupied by body. Giussani gives this illustration: 'if we think of the volume of water in the Ocean, we think of it as continuous, without regard to the fish that live in it, though we admit, on reflexion, that in the precise point where any fish is, there is no water.'

970. **telum**: Bentley first pointed out that *Lucr.* is thinking of the ancient method of declaring war, by which the *fetialis* threw a spear from the Roman territory into the hostile country: the ceremony is described in *Livy* i 32, 12.

971. **longe**, 'to a distance.'

974. **sumas**, 'accept.'

977. **probeat** is a contracted form of *prohibeat* (cf. iii 864), like *debere* and *praebere* from *dehibere* and *prahibere*.

978. **fini**, 'at the mark'. locative.

In 976 *fine* = a limit, in 979 it = *the* limit: we know already how freely Lucr. uses the same word in different senses in the same passage.

(But perhaps *fini* is dat., 'as a limit' to its motion, *locet* being coordinate with *probeat officiatque*.)

980. **sequar**, 'I shall follow you,' wherever you shift to.

**oras**: the borders of the universe.

981. **telo**: instr. abl.: 'what will be done with the dart,' i.e. what will happen to it.

982. **consistere**, 'be fixed': a passive of *constituere*.

983. **effugium**: an echo from l. 975: cf. l. 877.

**fugae copia**, 'the room given for flight.'

984. **praeterea** = thirdly. The third argument for the infinity of the universe begins here.

This argument depends upon the motion of atoms through void, which Lucr. has not yet described. According to Epicurus, all free atoms fall downwards owing to their weight; but they also have the power to swerve very slightly from the perpendicular, and this swerve brings them into collision with other atoms and makes creation of *res* possible. Now, suppose the universe were bounded in all directions, the existence of what may be called its roof and walls would matter less, because atoms that struck against these would rebound, owing to their weight, and collide with other atoms. But if the universe had a floor, what Lucr. calls *imum*, atoms which struck against it could never rise again; and in the course of infinite time all atoms would come to rest upon that floor, and no visible thing would exist in the universe.

985. **undique**, i.e. at the top, bottom, and sides; but it is the second of these which is shown to be of special importance.

986. **iam**, 'by this time.'

**materiali**, 'of atoms.'

987. **confluxet** for *confluxisset*: cf. l. 233 *consumpse*.

988. Lucr. suddenly shifts his statement for a moment from the universe to our world: this makes it possible to add picturesque detail.

990. **quippe ubi**: cf. l. 182.

**cumulata**, 'in one heap.'

991. **subsidente**: a fine instance of sound answering to sense.

992. **principiorum corporibus**: yet another name for atoms.

995. **res**, 'processes.'

996. **partibus e cunctis** = *undique*.

**inferna**, 'from beneath': adj. used for adverb: of course atoms rain in from all other directions as well, but they are of less importance for the present argument.

997. **ex infinito cita**, 'speeding out of infinite void': but in l. 1025 *ex infinito* = 'from infinite time past.'

998. **Lucr.** now sums up the argument of ll. 984-997.

**est**, 'exists.'      **natura loci** = *locus*.

**profundi**: a noun here.

999. **quod** = *tale ut*.

**clara fulmina**, 'a flash of lightning.'

1000. **labentia** = *si labantur*, 'even if it sped on.'

1001. 'Nor make the journey one whit the shorter by all its travel': *meando* is abl.

1002. **copia**, 'room.'

**rebus**, 'for things.'

1004-7 = 998-1001. The position of these lines, constantly debated by critics for many years past, has been (as I believe) finally settled by Giussani. As placed in the MSS., they interrupt the third proof; as placed by Munro (after l. 983), they merely repeat the first proof (ll. 958-964); but placed here, they serve to introduce the fourth proof, and have a real connexion with what follows.

1004. **postremo** = fourthly.

**ante oculos**: i.e. it is a matter of common experience; we can see for ourselves. This is an appeal to the senses.

1007. **omne quidem uero**, 'but the universe at all events,' whatever may be the case with other things: cf. ii 658.

Cf. l. 961 where the same statement was made.

1008. Admitting that there is nothing outside the universe to bound it, you may suggest that it bounds itself, by simply stopping. No, says **Lucr.**; that is impossible.

1009. **ne possit, tenet**, 'prevents it from being able': this constr. is commoner after *obtinere*.

1010. **autem**, 'also': cf. l. 857.

1011. **alternis**, 'by their alternation': cf. l. 524, where this statement was in part anticipated.

**omnia**, 'the universe.'

1012-1013. 'Or else that one of the two components, in case the other does not bound it, stretches nevertheless to infinity by itself.'

At this point some verses have been lost, but the text of Epicurus throws light upon the lost passage. He writes (Usener *l.l.* p. 7) καὶ τῷ πλήθει τῶν σωμάτων ἄπειρόν ἐστι τὸ πᾶν καὶ τῷ μεγέθει τοῦ κενοῦ. εἴ τε γὰρ ἦν τὸ κενὸν ἄπειρον τὰ δὲ σώματα ὠρισμένα, οὐδαμῶς ἂν ἔμενε τὰ σώματα ἀλλ' ἐφέρετο κατὰ τὸ ἄπειρον κενὸν διεσπαρμένα... εἴ τε τὸ κενὸν ἦν ὠρισμένον, οὐκ ἂν εἶχε τὰ ἄπειρα σώματα ὅπου ἐνέσθη. 'The universe is infinite both by reason of the multitude of atoms and the extent of void. For, if void were infinite and atoms finite, the atoms would not have stayed anywhere but would have been dispersed in their course through the infinite void. *Again, if void were limited, the infinite number of atoms would not have had any place wherein to be.*'

The words printed in italics give the substance of what has been lost in the text of Lucr. There is a difference of order, because Lucr. took second the hypothesis of infinite space and limited atoms; whereas the hypothesis of limited space and infinite atoms, which has disappeared from the text of Lucr., comes second in Epicurus.

The existence of this lacuna, early suspected, was proved by Madvig (*Opusc. Acad.* pp. 254 foll.) in 1832, eighteen years before the publication of Lachmann's edition.

1014-1051. < *But this is impossible. Body and void must each be infinite. For (1) if space were limited and atoms infinite, the atoms could not be contained in space; (2) if space were infinite, and the number of atoms limited, then our world with its inhabitants, and the gods outside our world, would instantly disappear; indeed, none of these things would ever have been formed. The formation of our world was not due to design: it is due solely to the constant movement through infinite time of an unlimited number of atoms. The preservation also of a world would be impossible, if atoms were limited in number. Fresh atoms may pour in for a time and give new life to an old world; but that renewal will not last for ever.*

1014. The three main divisions of our world (see n. to l. 2) would instantly disappear. All the worlds in the universe would be affected in the same way; but Lucr. purposely limits his view: see n. to l. 988.

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1015. **diuum**: not only our world, but the *intermundia* (see n. to l. 74) which the gods inhabit would dissolve.

The passage implies that the gods, like all other *res*, are made of atoms.

1016. **sistere**, 'to hold together.'

1017. **dispulsa**, 'forced asunder.'

1018. **magnum** = infinite, the hypothesis being that space is infinite and atoms limited.

1019. **sive adeo potius**, 'or rather': either *adeo* or *potius* might be omitted without altering the meaning.

**concreta creasset**, 'have combined to produce.'

1020. **cogi**, 'to be brought together.'

The proof ends here. What follows is an expansion of the thought contained in ll. 995-997.

1021-1025 are repeated in Book v 419 foll.

1021. **consilio**, 'by design.' The rejection of a Final Cause was a fundamental principle with Lucretius. This l. may be a sarcastic allusion to the Mind (*νοῦς*) which Anaxagoras believed to have brought order into chaos.

1022. **suo** is a monosyllable: *sis* is used for *suis* iii 1025.

1023. **darent**, 'they should impart' to one another.

1024. **mutata**, 'changing their place': the atoms themselves are unchangeable: cf. l. 676.

1025. **infinito**, sc. *tempore*.

It is the infinite duration of time, combined with the infinite number of atoms, which makes it possible for a swarm of atoms to reach, by mere chance, the positions necessary for the formation of a world. But, given these two conditions, every possible combination of atoms must, sooner or later, be realised.

**plagis**, 'by blows' of other atoms.

1026. **motus** and **coetus** are acc. plur., *omne genus* being used adverbially: cf. vi 917 *hoc genus in rebus* (in matters of this kind).

1028. **haec rerum summa**: see n. to l. 235.

1029. A further point: the preservation, as well as the creation, of a world depends upon an infinite supply of atoms.

**magnos...annos**: probably an allusion to the *magnus annus* or cycle of the Stoics, who held that all events repeated themselves exactly at an interval of 18,000 years. Some echo of this is heard



in *Peter Simple*, where Mr Muddle believed in a similar cycle of 27,672 years.

1030. **motus**, of atoms in combination.

1031. The three divisions of the world, sea, earth, and sky, are particularised with some detail.

**fluminis undis**, 'flowing water,' *flumen* having its primitive sense.

1032. **uapore**: see n. to l. 491.

1033. **summissa...floreat**, 'to come up and flourish': the sense of *summittere* seems akin to that of l. 8.

1034. **uiuant=durent**: for Lucr. expressly denies life to the heavenly bodies: cf. v 140 foll. This was a point of difference between Stoics and Epicureans.

1035-1051. Every world, while continually giving out atoms, is being pelted by atoms from outside, some of which are assimilated, while others cannot be assimilated, and rebound. Let A stand for the former kind and B for the latter. When the supply of A atoms runs short, the number of atoms in the world will decrease, and it will die (1035-1041; cf. also ii 1105 foll.). The blows of B atoms cannot save it: they can beat back the escaping atoms and keep together a part for a while, so as to give time for reinforcements of A atoms to come up (1042-1045); but they cannot strike every point at every instant; and, when they rebound, atoms in the world will follow them out and escape. There must therefore be an unailing supply of A atoms (1046-1049). Besides, even for the partial help given by the B atoms, there must be an unailing supply of them also (1050, 1051).

1035. **facerent**: the subjects are *amnes, terra,* and *aetheris ignes.*

1036. **suboriri** = *suppeditari*, 'to be supplied': cf. ii 1138 *suboriri ac suppeditare*: the prefix of the verbs does not appear to mean 'from beneath'; for the atoms swarm in from all sides.

1037. 'Whence they can make good their losses in each case (*quaeque*) before it is too late.'

**amissa quaeque** is acc.

1039. **corpus**, 'substance': cf. l. 810.

**omnia** = a world: in l. 1011 it stood for the universe.

1040. **suppeditare**: see n. to l. 547.

1041. **auersa uial**, 'turned away from its course': Virgil has the gen. after *desisto*, Horace after *desino*: all three constructions are imitations of Greek.

1042. *plagae*, 'blows' of atoms: the context shows, what Lucr. does not make clear, that these atoms are not assimilated.

1043. *est conciliata*, 'has been formed by a combination of atoms.'

1044. *cadere*, 'to hammer on...', governs *partem*.

1045. *aliae*, sc. *plagae*, i.e. impinging atoms; but these are such as can enter the world and be assimilated.

*queatur*: cf. iii 1010 *expleri potestur*: in each case the passive is due to the passive inf.: so, with a passive inf., *coeptus sum* and *desitus sum* are used by the best writers for *coepi* and *desii*.

1047. *principiis rerum*: these are the atoms inside the aggregate which we call a world.

1049. *etiam atque etiam*: cf. l. 295.

*multa*, sc. *primordia*, the acc. of *principiis*.

1050. *plagae...ipsae*, 'even the blows' of atoms which are not assimilated.

1051. *uis*, 'supply': the nom. after *opus est* is common enough.

1052-1082. *Beware of the Stoic doctrine, that all things tend to a centre, and that this tendency accounts for the stability of the world, and enables the inhabitants of the antipodes to walk about upside down without falling off. The fact is, that the universe has no centre; and, if it had, things would not tend to take up a position there. Space, wherever it exists, must give way to body.*

Lucr. now attacks the Stoic theory of a single finite world surrounded by infinite space, and especially their view that our world is held together by the centripetal tendency of its parts.

1052. *illud in his rebus*: see n. to l. 80.

1053. 'That all things press, as they say, towards the centre of the universe': 'they' are the Stoics, who held that our world remains fixed at the centre of the universe.

1054. *mundi naturam* = *mundum*.

1055. *ictibus*: these are the *plagae* of l. 1042.

*quoquam*, 'in any direction.'

1057. *si credis* = *non potes credere*: for the form of the sentence, cf. l. 848, iv 366 *aera si credis priuatum lumine posse | indugredi*: we might say 'But can you really believe, that...?'

Lucr. himself, when trying to account for the stability of the earth, is reduced to strange expedients (v 534-563).

1058. **pondera**, 'heavy bodies,' such as a house.  
**sunt**, for *sint*, is remarkable in *oratio obliqua*; but Munro defends it by similar examples.

**sub terris**, i.e. on the lower side of the earth.

**sursum**: in their struggle towards the centre.

Lucr. is ridiculing the Antipodes in whose existence he disbelieves.

1059. **retro posta**, 'upside down.'

1060. **ut** refers only to *retro posta*: reflexions in water do not press upwards.

**nunc**, 'actually.'

1061. **animalia**, 'living things': distinguished from *pondera*.

**suppa** = *supina*, 'upside down,' like a fly on the ceiling.

1062. **contendunt**, 'they argue.'

**loca caeli inferiora**, 'the part of the sky beneath them.'

1065. **illi**: nom. pl. masc.: the antipodes.

1066. **alternis**, 'turn about.'

**tempora caeli**, 'the seasons' (Munro); but perhaps Giussani is right in supposing that the reference is still to day and night.

1067. **noctes—diebus**, 'spend nights equal in length to our days': this must be the meaning, but the omission of *nostris* is surprising.

1068-1075. In the ms., no longer extant, from which all existing MSS. are derived, the top corner of a leaf was here torn off, so that the end words of these eight verses are lost. On the other side of the leaf, the beginnings of eight verses (1094-1101) were also torn off, and the copyist did not think it worth while to preserve the end words which he must have found there. This accident proves that the original ms. had 26 lines to a page.

1068. **stolidis**, 'for fools': see n. to l. 641.

1070. Lucr. repeats what he said in ll. 965, 967.

1071. **si iam**: see n. to l. 396.

1072. **consistere**, 'to take up a position.'

1073. **longe** goes with *repelli*.

1075. **per non medium**, 'and through no-centre': cf. ii 930 *ex non sensibu' sensus*.

1076. **ponderibus**, 'to heavy bodies,' as indeed to all *corpus* of whatever weight.

**motus quacumque feruntur**, 'in whatever direction their motions tend,' i.e. whether they pass, or not, through the imaginary centre.

1077. **quisquam** is often used as an adj. by Lucr.; and *ulli* below is used as a noun.

1078. **ponderis ul** = their weight.

1079. **autem**, 'also': so used chiefly in negative sentences. **subsistere**, 'to support.'

1080. **quin...pergat**, 'without proceeding,' i.e. 'but must proceed...'

**quod**, 'as.'

1082. **cuppeditine uictae** is ironical.

1083-1093. *The Stoic theory is not only false but inconsistent also: only two of the four elements are supposed to press towards the centre; the other two are said to fly from it.*

1084. **sed**, 'but only.'

Munro supposed that a verse is lost here of this kind—*et quae de supero in terram mittuntur ut imbres*; and this gives good sense. But Giussani asks, what is the use of this distinction, and why is water described at such disproportionate length, and what is the meaning of *quasi*. He himself transposes ll. 1085, 1086, and translates thus—'things which are comprised, so to speak, in the terrestrial element,' i.e. metals, plants, animals etc. His view seems to gain support from Seneca *Nat. Quaest.* ii 1, 2 *tertia pars de aquis, terris, arbustis, satis (crops) quaerit, et, ut iurisconsultorum uerbo utar, de omnibus quae solo continentur.*

1087. **tenuis...auras**, 'the subtle element of air.'

1088. **simul**, 'likewise.'

1089. **signis**: cf. l. 2.

1090. **pascl**: see n. to l. 231.

1092, 1093. Two puzzling lines, whose connexion with the subject would be clearer, if the text were complete. The upward growth of plants is again referred to in ii 189 *sursum nitidae fruges arbustaque crescunt*, | *pondera (= corpora), quantum in se est, cum* (though) *deorsum cuncta ferantur.*

Perhaps the Stoics explained the upward growth of trees as the result of internal heat: this was the explanation given by Empedocles.

1094-1101. Of the conclusion at least of the lost verses there can be no doubt: Lucr. must have repeated here that the number of atoms is infinite, or else the destruction of the world would take place immediately.

**1102-1113.** <The number of atoms must be infinite>, or else the world would be instantly destroyed. The firmament would be dissolved, the sky and the earth disappear, and everything be resolved into atoms. The process of destruction would begin at any point where the store of atoms failed.

Lucr. here expands ll. 1017, 1018 into a magnificent picture of the world's destruction. He held that it would in no long time be destroyed, and in the way here described.

1102. **moenia mundi**: see n. to l. 73.

1103. **subito**, 'instantly': cf. l. 186.

1104. **cetera**, 'all other things,' i.e. earth and sea, and all that they contain.

1105. **caeli tonitralia templa**, 'the region of the sky stored with thunder.'

The *aether* is the first thing to disappear; next follows the *aer*, or lower sky, the region of storms.

*tonitrualia*, the true form of the adj., the verse will not admit.

**superne**, 'from above': cf. l. 496: this word is very common in Lucr., and always means 'above' or 'from above.'

Giussani takes it here as 'upwards' (for which Lucr. uses *sursum*). He says that all the movements described are centrifugal: the sky rushes up, the earth rushes down, both in the form of atomic dust. But (1) no authority before the elder Pliny is given for this meaning of *superne*; (2) *permixtas rerum caelique ruinas* of l. 1107 is against this interpretation; (3) *caelum ruit, caeli ruina*, are common in Latin poetry (e.g. Terence *H. T.* 719, Virg. *Aen.* i 129), and always refer to the sky falling down.

1106. **omnis**, 'all of it': fem. sing. agreeing with *terra*.

1107. **rerum**, being coupled with *caeli*, must mean 'things belonging to earth.'

1108. **corpora soluentes**, 'letting their atoms go free': strictly speaking, the *res*, not the *ruinae*, do this.

**abeat**, 'should pass away.'

1110. **desertum** = *sine rebus*, 'untenanted.'

**caeca**, 'invisible.'

Thus an imaginary spectator of the catastrophe would, when it was completed in one moment, see—nothing.

These two lines reach the summit of the sublime and terrible

Mr Vesey compares 2 *Henry IV* i 1, 159 'that the rude scene may end, | and darkness be the burier of the dead!'

1111. **prius** has the sense of *primum*: it is better, I think, to take it with *desse* than with *constitues*.

**partl**, 'point.'

**corpora**, 'atoms.'

1112. **rebus** = 'for the visible world.'

**ianua leti**: again v 373.

1113. **turba**, 'the welter,' suggests confusion as well as number.

**se foras dabit**, 'will hurl itself abroad': *dabit*, lit., 'will place.'

1114-1117. *Master these principles, and the rest of the system will not give you trouble. One point will throw light upon another.*

This passage was first made intelligible by Munro, who saw that it was akin to ll. 402-409: the text of the MSS. has never been explained.

1114. **haec** refers to this first book, *cetera* to the five which follow.

**si pernosces**, 'if you master,' 'study thoroughly.'

**parua opella** (dim. of *opera*) = *paruo labore*.

The l. which follows was constructed by Munro on the model of l. 407.

1115. **alid ex alio**: cf. l. 407: this repetition is one of the chief arguments for Munro's insertion.

1116. **iter**: the student is compared to a traveller: as the belated traveller seeks shelter, so the student seeks full knowledge of nature's laws.

**ultima natural** = *caccas latebras* of l. 408.

1117. **res...rebus**, 'one thing...for another.'

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